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UNITED STATES COAST GUARD OPERATIONS IN ALASKA

HEARING

BEFORE A

SUBCOMMITTEE OF THE

COMMITTEE ON APPROPRIATIONS

UNITED STATES SENATE

ONE HUNDRED TWELFTH CONGRESS

SECOND SESSION

SPECIAL HEARING

AUGUST 6, 2012—KODIAK, AK

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UNITED STATES COAST GUARD OPERATIONS IN ALASKA

MONDAY, AUGUST 6, 2012

U.S. SENATE,
SUBCOMMITTEE ON HOMELAND SECURITY,
COMMITTEE ON APPROPRIATIONS,
Kodiak, AK.

The subcommittee met at 9:40 a.m., at Hangar No. 3, U.S. Coast Guard Air Station Kodiak, in Kodiak, Alaska, Hon. Mary L. Landrieu (chairman) presiding.

Present: Senators Landrieu and Murkowski.

OPENING STATEMENT OF SENATOR MARY L. LANDRIEU

Senator LANDRIEU. Thank you so much for joining us for this Subcommittee on Homeland Security Appropriations, and I would like to call the hearing to order.

It is truly an honor for me to be back here in Alaska. This is my third time as a United States Senator. I had the great pleasure of visiting over a decade ago with a wonderful host, very well known to my colleague, Senator Murkowski, because I was a guest of her father, Senator Frank Murkowski. A few years later, I had the opportunity to come back to Alaska with the Hon. Ted Stevens.

It really is a joy and a privilege. I thank Senator Murkowski for encouraging me, as a wonderful member of this subcommittee, to hold this important field hearing here in Kodiak, Alaska.

I want to begin by acknowledging Chairman Malutin. Thank you very much for inviting us to his island. The mayors are also here, and we have several elected officials.

I know that Senator Murkowski, who has just been a phenomenal leader for Alaska, and such a strong voice, not only for this community, but for the entire State, I'm sure that she will recognize some of those individuals in her opening statement.

I want to begin with an opening statement, which is our procedure. I will turn it then over to Senator Murkowski.

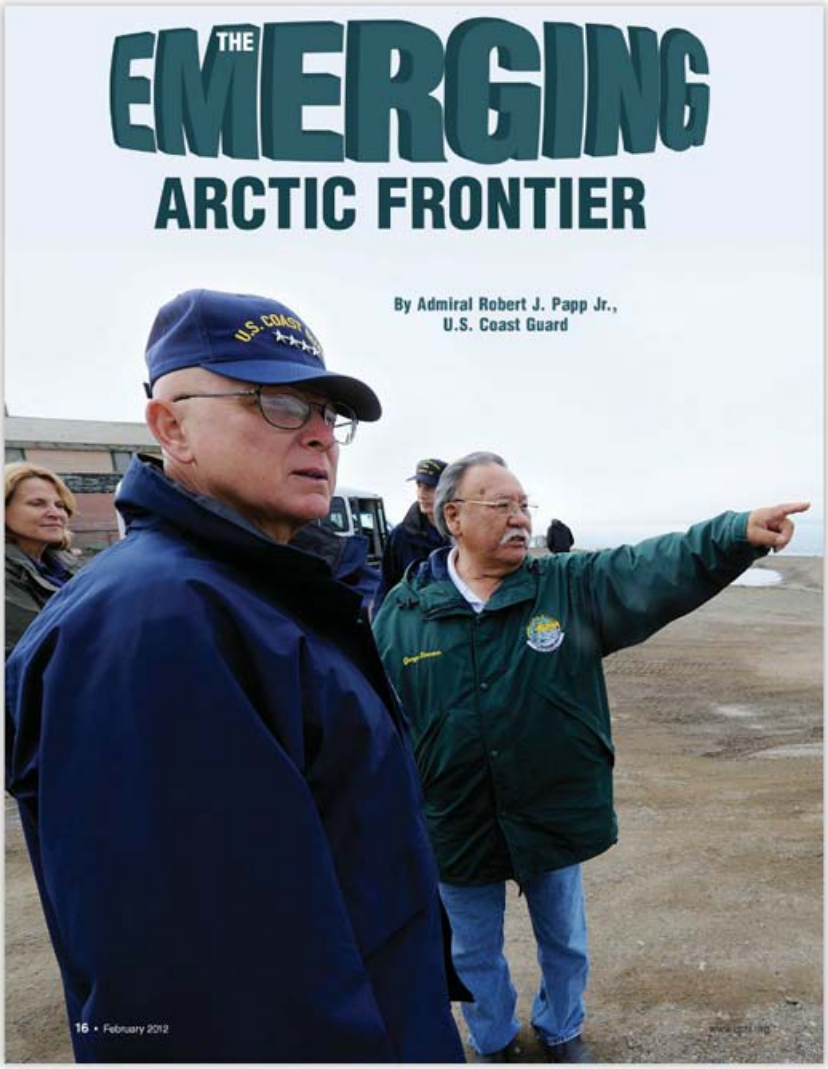
I am thrilled to be here at, literally, the largest Coast Guard station in America, with thousands of men and women from our Coast Guard. This is a little late, but happy birthday for your 222nd birthday. We have been celebrating, I'm sure, Admiral, all over the Nation and the world, because of the extraordinary work of the Coast Guard. So my belated happy birthday to all of you.

I wanted to begin with a statement that came from an article, and I would like to put it in to the record. Admiral Papp wrote this article. It is called the "Emerging Arctic Frontier". I'm sure that he will refer to it in his opening statement.

But I think it is appropriate, Senator Murkowski, for us to begin at your charge to hold this hearing today with the words of Admiral Papp when he says, "The world may seem to be growing smaller, but its seas are growing bigger, particularly in the great north where a widening water highway beckons both with resources and challenges."

That's why Senator Murkowski has asked me to conduct this hearing this morning. I'm happy to do it. I would like to submit for the record, and without objection, the entire article.

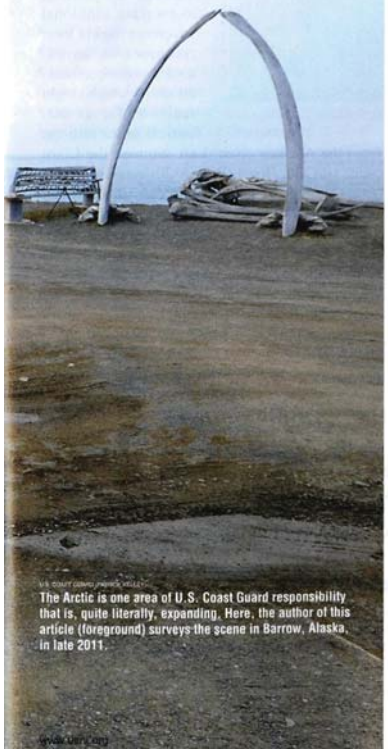
[The article, originally published in Proceedings Magazine on pages 16–21 (February 2012 Vol. 138/2/1,308), follows:]



THE EMERGING ARCTIC FRONTIER

By Admiral Robert J. Papp Jr.,
U.S. Coast Guard

The world may seem to be growing smaller, but its seas are growing bigger—particularly in the great North, where a widening water-highway beckons both with resources and challenges.



U.S. Coast Guard photo by Petty Officer

The Arctic is one area of U.S. Coast Guard responsibility that is, quite literally, expanding. Here, the author of this article (foreground) surveys the scene in Barrow, Alaska, in late 2011.

As a maritime nation, the United States relies on the sea for our prosperity, trade, transportation, and security. We are also an Arctic nation. The Arctic region—the Barents, Beaufort, and Chukchi seas and the Arctic Ocean—is the emerging maritime frontier, vital to our national interests, economy and security.[1]

The Arctic Ocean, in the northern region of the Arctic Circle, is changing from a solid expanse of inaccessible ice fields into a growing navigable sea, attracting increased human activity and unlocking access to vast economic potential and energy resources. In the 35 years since I first saw Kotzebue, Alaska, on the Chukchi Sea as a junior officer, the sea ice has receded from the coast so much that when I returned last year the coastal area was ice-free. The shipping, oil-and-gas, and tourism industries continue to expand with the promise of opportunity and fortune in previously inaccessible areas. Experts estimate that in another 25 years the Arctic Ocean could be ice-free during the summer months.[2]

This change from "hard" to "soft" water, growing economic interests and energy demands, and increasing use of the seas for maritime activities by commercial, native, and recreational users demands a persistent, capable U.S. Coast Guard presence in the Arctic region. Our mandate to protect people on the sea, protect people from threats delivered by sea, and protect the sea itself applies in the Arctic equally as in the Atlantic and Pacific oceans and Gulf of Mexico and Caribbean Sea.

The difference is that in the rest of the maritime domain, we have an established presence of shore-based forces, small boats, cutters, and aircraft supported by permanent infrastructure and significant operating experience. Although the Coast Guard has operated in southern Alaska, the Gulf of Alaska, and Bering Sea for much of our history, in the higher latitudes we have little infrastructure and limited operating experience, other than icebreaking. Historically, such capabilities were not needed. Year-round ice, extreme weather, and the vast distances to logistical support, prevented all but icebreakers or ice-strengthened ships from operating there. As a result, commercial enterprise on any significant scale was nonexistent. But the Arctic is emerging as the new maritime frontier, and the Coast Guard is challenged in responding to the current and emerging demands.

Resource-Rich Realm

The economic promise of oil and gas production in the Arctic is increasingly attractive as supply of energy resources from traditional sources will struggle to meet demand without significant price increases. The Arctic today holds potentially 90 billion barrels of oil, 1.6 trillion cubic feet of natural gas, and 44 billion barrels of natural gas liquids, 84 percent of which is expected to be found in offshore areas. This is estimated to be 15 percent of the world's undiscovered oil reserves and 30 percent of natural gas reserves. Oil companies are bidding hundreds of millions of dollars to lease U.S. mineral rights in these waters and continue to invest in developing commercial infrastructure in preparation for exploration and production, and readiness to respond to potential oil spills or other emergencies.[3] In August, the Department of the Interior granted Royal Dutch Shell conditional approval to begin drilling exploratory wells

in the Beaufort Sea north of Alaska starting next summer. ConocoPhillips may begin drilling in the Chukchi Sea in the next few years. Also, Russia has announced plans for two oil giants to begin drilling as early as 2015, and Canada has granted exploration permits for Arctic drilling.[4]

Icebreaker essential to resolve Nome fuel crisis

As this article went to print, the Coast Guard cutter *Healy* (left) had just cleared a path through hundreds of miles of Arctic ice to allow the commercial tanker *Renda* to deliver gasoline and diesel fuel to Nome, Alaska, which is currently inaccessible by road. The fuel will replenish Nome's scarce supplies and sustain the residents through the winter freeze. The situation arose after a regularly scheduled shipment was delayed in November by severe storms in the Bering Strait. The *Healy* was completing a scheduled science mission when it diverted to assist. The Coast Guard is responsible for providing U.S. domestic and polar icebreaking capability.

U.S. COAST GUARD (DAVID FRANCIS)

The fisheries and seafood industry in the southern Arctic region (the Bering Sea and Gulf of Alaska) sustains thousands of jobs and annually produces approximately 1.8 million metric tons' worth of catch valued at more than $1.3 billion.[5] Although subsistence-hunting has occurred in the higher latitudes for centuries, as waters warm, fish and other commercial stocks may migrate north, luring the commercial fishing industry with them.

As the Arctic Ocean becomes increasingly navigable it will offer new routes for global maritime trade from Russia and Europe to Asia and the Americas, saving substantial transit time and fuel costs from traditional trade routes. In summer 2011, two Neste oil tankers transited the Northeast Passage from Murmansk to the Pacific Ocean and onward to South Korea, and Russian Prime Minister Vladimir V. Putin pledged to turn it into an important shipping route.[6]

Resolving an Old Liability on the Rule of Law

Because of these opportunities and the clamor of activities they bring, a legally certain and predictable set of rights and obligations addressing activity in the Arctic is paramount. The United States must be part of such a legal regime to protect and advance our security and economic interests.

In particular, for the past several years there has been a race by countries other than the United States to file internationally recognized claims on the maritime regions and seabeds of the Arctic. Alaska has more than 1,000 miles of coastline above the Arctic Circle on the Beaufort and Chukchi seas.[7] Our territorial waters extend 12 nautical miles from the coast, and the exclusive economic zone extends to 200 nautical miles from shore (just as along the rest of the U.S. coastline). That's more than 200,000 square miles of water over which the Coast Guard has jurisdiction.

Below the surface, the United States also may assert sovereign rights over natural resources on its continental shelf out to 200 nautical miles. However, with accession to the Law of the Sea Convention, the United States has the potential to exercise additional sovereign rights over resources on an extended outer continental shelf, which might reach as far as 600 nautical miles into the Arctic from the Alaskan coast. Last summer, the Coast Guard cutter USCGC *Healy* (WAGB-20) was under way in the Arctic Ocean, working with the Canadian icebreaker *Louis S. St-Laurent* to continue efforts to map the extent of the continental shelf.

The United States is not a party to the Law of the Sea Convention. While this country stands by, other nations are moving ahead in perfecting rights over resources on an extended continental shelf. Russia, Canada, Denmark (through Greenland), and Norway—also Arctic nations—have filed extended continental-shelf claims under the Law of the Sea Convention that would give them exclusive rights to oil and gas resources on that shelf. They are making their case publicly in the media, in construction of vessels to patrol these waters, and in infrastructure along their Arctic coastline. Even China, which has no land-mass connectivity with the Arctic Ocean, has raised interest by conducting research in the region and building icebreakers.[8] The United States should accede to the Law of the Sea Convention without delay to protect our national security interests: sovereignty, economy, and energy.

Arctic Responsibility

Wherever human activity thrives, government has a responsibility to uphold the rule of law and ensure the safety and security of the people. The Coast Guard is responsible for performing this mission on the nation's waters, as we have done in parts of Alaska over our 221-year history.

Coast Guard operations in the Arctic region are not new. Nearly 150 years ago, we were the federal presence in the "District of Alaska," administering justice, settling disputes, providing medical care, enforcing sovereignty, and rescuing people in distress. Our heritage is filled with passages of Coast Guardsmen who braved the sea and ice in sailing ships and early steam ships to rescue mariners, quash illegal poaching, and explore the great North. World War II ushered in the service's first icebreakers. In 1957, three Coast Guard cutters made headlines by becoming the first American vessels to circumnavigate the North American continent through the Northwest Passage. That mission was in support of an early Arctic imperative to establish the Distant Early Warning Line radar stations to detect ballistic-missile launches targeting the United States during the Cold War.

The Coast Guard presence in southern Alaska, the Bering Sea, and Gulf of Alaska continues to be persistent and capable, matching the major population and economic concentrations and focus of maritime activities. The 17th Coast Guard District is responsible for directing the service's operations in Alaska with:

- two sectors
- two air stations
- twelve permanently stationed cutters and normally one major cutter forward-deployed from another area
- three small-boat stations
- six marine safety units or detachments
- one regional-fisheries training center
- five other major mission-support commands.[9]

We ensure maritime safety, security, and stewardship in the region by conducting search and rescue, fisheries enforcement, inspection and certification of ships and marine facilities to ensure compliance with U.S. and international safety and security laws and regulations, and preventing and responding to oil spills and other water pollution.

The Coast Guard strengthens U.S. leadership in the Arctic region by relying on effective partnerships with other federal, state, local, and tribal governments and industry members. We are working with other federal partners within the Department of Homeland Security, the military services and combatant commanders within the Department of Defense, the National Oceanic and Atmospheric Administration, and the Bureau of Safety and Environmental Enforcement within the departments of Interior, State, and Justice to achieve unity of effort within the interagency team at the port and regional level. And we rely on cooperation from international partners, be they permanent close allies such as Canada or our maritime counterparts in Russia and China, with whom we are developing ties.

Although we have lived and served in southern Alaska for most of the Coast Guard's existence, our access to and operations in northern Alaska on the North Slope have been only temporary and occasional, with no permanent infrastructure or operating forces along the Beaufort or Chukchi seas. There are no deepwater ports there.

U.S. COAST GUARD (PATRICK KELLEY)

Throughout the history of the region, the Coast Guard's presence in the North was often the *only* federal presence. Today, the USCGC *Healy* is a salient element of the service's profile there, keeping busy on missions ranging from scientific surveys to icebreaking.

"The Coast Guard strengthens U.S. leadership in the Arctic region," notes the author, "by relying on effective partnerships. . . ." Here, a Coast Guard MH-60 Jayhawk rescue helicopter lands on the tarmac at Kotzebue, Alaska, with an Army National Guard UH-60 Blackhawk and Air Force National Guard HH-60 Pavehawk coming in close behind during a joint outreach mission to remote Alaskan villages.

However, the acceleration of human activity in the northern Arctic region, the opening of the seas, and the inevitable increase in maritime activity mean increased risk: of maritime accidents, oil spills, illegal fishing and harvesting of other natural resources from U.S. waters, and threats to U.S. sovereignty. Those growing risks—inevitable with growth of human activity—demand the Coast Guard's attention and commitment to meet our responsibilities to the nation.

Preparing to Lead

Our first challenge is simply to better understand the Arctic operating environment and its risks, including knowing which Coast Guard capabilities and operations will be needed to meet our mission requirements. Operating in the Arctic region presents challenges to personnel, equipment, and tactics. What would be normal cutter, boat, or aircraft operations almost anywhere else become more risky and complex. The climate can be one of extremes many months of the year, with continuous sub-zero temperatures and more hurricane-force storms each year than in the Caribbean. It's hard on equipment: Industrial fluids freeze, metal becomes brittle, and electronic parts fail. It's also hard on people, who must acclimate to exaggerated daylight and darkness, harsh weather conditions, limited services, and isolation from family.

One of the most significant challenges is the lack of Coast Guard infrastructure in key locations along the northern Alaskan coastline that will be needed to sustain even basic shore-based operations. Today we rely on partner agencies and industry to support any sustained operations. Cutters, aircraft, boats, vehicles, and people require constant mission support and logistics. We are already exploring requirements to establish temporary forward-operating bases on the North Slope to support shore-based operations, enabling temporary crews and equipment to deploy to support a specific operation, and then return to home station when complete.

We have been improving our understanding by increasing operations. We conduct regular Arctic Domain Awareness flights by long-range maritime-patrol aircraft along the North Slope and over the Arctic Ocean, assessing aircraft endurance and performance and monitoring maritime activity. Since 2008, we have conducted Operation Arctic Crossroads, deploying personnel, boats, and aircraft to small villages on the Arctic coast such as Barrow, Kotzebue, and Nome. While there, we test boats for usability at these high latitudes and conduct flight operations. We also work closely with the Army and Air National Guard and the Public Health Service to provide medical, dental, and veterinary care to outlying villages. In return, we learn from their expertise about living and operating in this environment. These services invest in deepening our partnerships with and understanding of local peoples.

Next, we must prepare by ensuring that Coast Guard men and women have the policy, doctrine, and training to operate safely and effectively in the northern Arctic

region. We have relearned fundamental lessons in recent years about the need to be prepared when taking on new operational challenges. We will train personnel beyond qualification to proficiency to live and work for extended periods in the extreme cold and other harsh conditions there. We will ensure cutters, aircraft, boats, deployable specialized forces, and mission-support personnel have the equipment, training, and support they require to succeed.

Finally, we are working closely with other key federal partners to lead the interagency effort in the Arctic. The Coast Guard has significant experience and success with speaking the interagency language, bridging the traditional divides between military and law enforcement at the federal level, and synchronizing efforts between federal, state, local, tribal, and private-sector stakeholders. Simultaneously a military service, a law-enforcement and regulatory agency, and an intelligence-community member that is part of the Department of Homeland Security, the Coast Guard is in a unique position to exercise leadership in this emerging maritime frontier.

Prevention and Response

Coast Guard missions rely on the twin pillars of prevention and response. We will take actions to prevent maritime safety, security, and pollution incidents in the Arctic. In our regulatory role, we are working with the Department of the Interior to review oil-spill response plans and preparedness by the oil-and-gas and maritime industries prior to exploration activities, especially on the outer continental shelf. We are taking the lessons from the 2010 *Deepwater Horizon* disaster to ensure that type of incident does not happen again, especially in the Arctic. We regulate U.S. mariners and inspect vessel- and facility-security plans. When a marine casualty does occur, we will investigate and take appropriate action to prevent it from happening again.

As a law-enforcement agency, we will provide security in the ports, coastal areas, and exclusive economic zone to enforce U.S. laws governing fisheries and pollution, while ensuring the security of lawfully permitted activities, including energy exploration, in the region. We will deploy cutters, boats, aircraft, and deployable specialized forces—maritime safety-and-security teams, strike teams, dive teams—when the mission demands.

As a military service, we will enforce U.S sovereignty where necessary, ensuring freedom of navigation and maritime homeland security. The *Healy*—our only operational icebreaker—and other ice-strengthened cutters will patrol where they can safely operate to provide persistent presence on the high seas and maritime approaches to the United States.

We are developing and will execute starting summer 2012 an Arctic Maritime Campaign with the objective of establishing a path forward for the Coast Guard to meet our responsibilities to the nation in the Arctic. This campaign will:

- define the required mission activities for the Coast Guard in the northern Arctic region
- determine capabilities (personnel, equipment, facilities) necessary to plan, execute, and support operations there
- identify available resources for the mission and resource gaps
- fully prepare our service and Coast Guard personnel to safely and effectively operate there.

Initially, the Arctic Maritime Campaign will be a Coast Guard plan for service operations in coordination with other partners—a basic first step for any mission. From there, we will work to improve interagency coordination as activities and operations increase.

My years at sea taught me many life lessons; chief among those is vigilance, the art of keeping a weather eye on emerging challenges so that the service can adequately prepare and take early and effective action to prevent and respond to trouble. As I scan the horizon, one area demanding our immediate attention is the Arctic. America is a maritime nation and an Arctic nation. We must recognize this reality and act accordingly. The Coast Guard is working to do its part. For more than 221 years, we have overseen the safety, security, and stewardship of our nation's waters. Our challenge today is to ensure we are prepared with a Coast Guard capable and ready to meet our responsibilities in the emerging maritime frontier of the Arctic.

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Admiral Papp is Commandant of the Coast Guard.

Senator LANDRIEU. I welcome the Coast Guard men and women, citizens of Kodiak, and others who were able to join us today.

Any given year, the Coast Guard saves approximately 3,800 lives. It removed, last year, 166,000 pounds of cocaine in transit to the United States. It interdicted more than 2,500 undocumented migrants attempting illegally to enter the country, and conducted more than 1,700 boardings of high-interest vessels bound for the United States.

Even more impressively, in an average month in Alaska, the Coast Guard conducts 51 search-and-rescue cases, conducts 161 vessel boardings, saves or assists 74 people, services 59 aids to navigation, and responds and investigates at least 10 pollution incidents, and monitors the transit of 25 tankers carrying more than 700 million gallons of oil safely through Prince William Sound, and ensures that more than 1.38 million pounds of explosives are safely transported through Alaska's maritime transportation network.

Just an average day at work for the thousand men and women that wear the uniform proudly and support Alaska, our Nation, and the world.

As I said, I am so pleased to join my dear friend and colleague and partner, Senator Lisa Murkowski. We not only serve on Homeland Security together, but we have served for many years on the Energy Committee together, and are excited about our adventures and opportunities in exploring resources for this Nation.

But we are here today to discuss Coast Guard operations in Alaska, the strategic importance of the Arctic, and the challenges facing the Coast Guard in this region.

Approximately 2,500 Coast Guard personnel support operations in Alaska, which encompasses 3.8 million square miles and more than 44,000 miles of coastline.

Much of the Alaskan way of life occurs on the water. At times, this environment can be harsh and unforgiving. That's what makes it so important, I believe, for our subcommittee and others in the Congress to support the work of the Coast Guard here on the ground.

Their many missions include fisheries enforcement, search and rescue, port security, and environmental response, and I would like to believe, in partnership with the oil and gas industry, oversight, yes; enforcement, yes; but a real partnership with the private sector to deliver the resources essential for our Nation.

Not only has Senator Murkowski been a leading advocate, but Senator Begich, who is not with us today at the hearing but is at work in Alaska with other officials, touring another part of the State.

We are pleased to have on our first panel Admiral Papp, Commandant of the Coast Guard. Our second panel, chosen by Senator Murkowski, is Dr. Mark Myers, vice chancellor for research at the University of Fairbanks; Merrick Burden, executive director of the Marine Conservation Alliance; and Bruce Harland, vice president, contract services, Crowley Marine. We are thrilled to have you all, and we'll call on you in just a moment, after our opening statements.

The work of the Coast Guard, or the work the Coast Guard does in Alaska, is not unfamiliar to us in Louisiana. We, too, have a

very large Coast Guard, very vibrant fishery, and extraordinarily robust oil and gas drilling off of our coast. In fact, 80 percent of the offshore oil and gas resources of the Nation come off the coast of Louisiana, Texas, Mississippi, and Alabama.

So these assets and these challenges are very, very familiar to me.

I would be remiss, Senator Murkowski, if I did not mention the special place the Coast Guard holds in my heart and in the hearts of the 4.5 million Louisianans that I represent, and 10 million people along the gulf coast, because, Admiral, as you know, the Coast Guard was first on the job after Hurricanes Katrina and Rita, and rescued, at that time, 33,000 people, not over open water, where the Coast Guard had trained, but flying in and out of tall buildings, over and under electrical lines, literally rescuing people out of 14- and 20-foot floodwaters in the middle of the city. What an amazing vision for the Coast Guard, and they carried it out beautifully.

Admiral, the people of Louisiana will always be grateful for the heroic efforts of the Coast Guard, along with our Cajun navy, as we say, and coasties, too, to help you in that effort.

Let me hit just a few other highlights of the fiscal year 2013 appropriations bill that Senator Murkowski helped me draft. With her help and input, we have been able to plus-up some of the Coast Guard assets, even in tight budget times. She and I believe that we need to direct more of the limited resources we have to support this arm of our military.

With her help, our bill will include $10.36 billion for the Coast Guard, $282 million above the President's request. The bill provides targeted increases above the request to ensure Coast Guard personnel serving on the front line have the resources they need to accomplish these important missions. Some of the benefits that will come directly to the Nation and Alaska include: $620 million for the sixth national security cutter (NSC); $77 million for long-lead materials for the seventh NSC; $335 million for six fast response cutters (FRCs), two of which will be homeported here in Alaska; $25 million for the continued development of the offshore patrol cutter (OPC); $8 million for initial acquisition planning and design of a new polar icebreaker, a priority to both Senator Murkowski and myself. I'm sure she'll speak more about this in the coming minutes.

And, $10 million is for military family housing. I want to give Admiral Papp a shout-out for his advocacy for housing issues, and particularly Linda Papp for her extraordinary advocacy on behalf of the Coast Guard families that live in very rural areas sometimes in our country, and don't have access to all of the bells and whistles, Senator, that some of our other communities enjoy. Housing is important for them, to have that kind of comfort and quality of life, not luxurious, but comforting for themselves and their children. As a mother and a wife, she most certainly understands that, and so do we.

So we are really focused on upgrading the housing for our military, and hope we can report some good results.

We have $69 million for construction and upgrades of shore facilities; $5 million to renovate the aircraft hangar in Cold Bay right

here in Alaska; and $1.1 million for new fuel tanks in Sitkinak; $8 million to slow the retirement of one of our high endurance cutters (WHECs). I could go on.

These are just some of examples of what we have invested in this budget, as soon as we can get it passed for the Coast Guard this year.

A specific focus of ours today, in trying to conclude here, is the diminishing ice, or the retreating ice in the Arctic, and resulting implications for the Coast Guard's responsibilities, and the assets needed to respond.

Scientists predict that the Arctic will be ice-free in the summer months by late 2030. This is truly an extraordinary change on our planet, and we must be ready for it.

Rarely used shipping routes, such as the Northwest Passage, the Northern Sea Route, will likely be used more frequently. Exploration for natural resources is expected to intensify.

The United States Geological Survey estimates that the Arctic accounts for about 13 percent of the world's undiscovered oil, and 30 percent of its undiscovered natural gas.

The Commandant has been vocal about the trend of diminishing ice and what it means for the Coast Guard. I referred to the article he wrote. Let me quote again. He says: "This change from 'hard' to 'soft' water, growing economic interest and energy demands, and increasing use of the seas for maritime activities by commercial, native, and recreational users demand a persistent, capable U.S. Coast Guard presence in the Arctic region. Our mandate to protect people on the sea, protect people from threats delivered by the sea, and protect the sea itself applies in the Arctic equally as well as the Atlantic, Pacific Oceans and the Gulf of Mexico and the Caribbean Sea."

Unfortunately, today, two of our Coast Guard's three polar icebreakers, the *Polar Star* and the *Polar Sea*, have well exceeded their intended 30-year service lives and are not currently operational.

The *Polar Star* is being refurbished to reenter service in 2013 for another 7 to 10 years. The Coast Guard plans to decommission the *Polar Sea*.

We all saw the importance of the Coast Guard's icebreaking capabilities this past winter when one of the active icebreakers, the *Healy*, which I am so proud was built by the strong and wonderful people in Avondale shipyards in my hometown of New Orleans, Louisiana, broke through the ice to deliver fuel to the people of Nome. Louisiana and Alaska have very strong partnerships, and I am so pleased that that ship was built at home in my State.

Many comprehensive studies of icebreaker requirements have been conducted over the years. All have concluded that a polar icebreaking fleet is essential to the national interest.

PREPARED STATEMENT

I want to thank Senator Murkowski for her tireless efforts advocating for the polar fleet, reminding us that we are an Arctic Nation. I'm very happy to turn the mike over to Senator Murkowski for her opening statement, and want to commit to her—she has heard me say this in Washington, but I wanted to come to Alaska

to say it, that I want to be a partner with her to develop assets that our Nation needs to stay first in global competition, first in commercial, and first in proper natural resource development. Alaska is really that frontier and so is the Arctic.

[The statement follows:]

PREPARED STATEMENT OF SENATOR MARY L. LANDRIEU

Good morning. I call the subcommittee to order.

I welcome the Coast Guard men and women, citizens of Kodiak, and others who were able to join us today. Saturday was the Coast Guard's 222nd birthday, so I want to wish everyone in the Coast Guard a belated happy birthday. In 2011, the Coast Guard saved over 3,800 lives, removed over 166,000 pounds of cocaine in transit to the United States, interdicted over 2,500 undocumented migrants attempting to illegally enter the country, and conducted over 1,700 boardings of high interest vessels bound for the United States. In an average month in Alaska, the Coast Guard conducts 51 search-and-rescue cases; conducts 161 vessel boardings; saves or assists 74 people; services 59 aids to navigation; responds and investigates 10 pollution incidents; monitors the transits of 25 tankers carrying more than 700 million gallons of oil safely through Prince William Sound, and ensures that more than 1.38 million pounds of explosives are safely transported through Alaska's maritime transportation network.

I am pleased to join my friend and colleague, Senator Lisa Murkowski, to discuss Coast Guard operations in Alaska, the strategic importance of the Arctic, and the challenges facing the Coast Guard in the region. Approximately 2,500 Coast Guard personnel support operations in Alaska, which encompasses 3.85 million square miles and more than 44,000 miles of coastline. Much of the Alaskan way of life occurs on the water, and the harsh and unforgiving environment makes it critical that our Coast Guard men and women have the resources to perform their many missions here, including: fisheries enforcement, search and rescue, port security, and environmental response. We are joined today by two panels of distinguished witnesses to discuss these matters.

Our first panel includes:

—Admiral Robert J. Papp, Commandant of the Coast Guard; and

Our second panel includes:

—Dr. Mark Myers, Vice Chancellor for Research, University of Fairbanks;
—Merrick Burden, Executive Director, Marine Conservation Alliance; and
—Bruce Harland, Vice President—Contract Services, Crowley Marine.

The Coast Guard will forever be in my heart and in the hearts of my Louisiana constituents in light of its heroic efforts following Hurricane Katrina. The Coast Guard rescued over 33,000 of our citizens during the largest search and rescue mission in Coast Guard history. When Katrina hit, Admiral Papp was the Commander of the Ninth Coast Guard District, an area that covers the Great Lakes. To help in the response effort, he ordered the deployment of several hundred personnel under his command to the gulf region. I am forever grateful to him and the Coast Guard men and women who helped aid those in need following the hurricane.

In May of this year, Admiral Papp testified before this subcommittee on the Coast Guard's budget request for fiscal year 2013. At that hearing, we were able to discuss some of the challenges facing the Coast Guard, including the need to recapitalize its aging fleet of ships and planes. That hearing helped the Senate Homeland Security Appropriations Subcommittee make key funding decisions for the Coast Guard's fiscal year 2013 budget. With the help of Senator Murkowski, the fiscal year 2013 Senate appropriations bill includes $10.336 billion for the Coast Guard, $282 million above the administration's request. The bill provides targeted increases above the request to ensure that Coast Guard personnel serving on the front lines have the resources to accomplish their missions in fiscal year 2013 and in the future. Specific investments that will benefit the Nation and Alaska include:

—$620 million for the sixth national security cutter;
—$77 million for long-lead material for the seventh national security cutter;
—$335 million for six fast response cutters, two of which are expected to be homeported in Alaska;
—$25 million for the continued development of the offshore patrol cutter;
—$8 million for initial acquisition planning and design of a new polar icebreaker;
—$10 million for military family housing;
—$3.1 million for 26 billets to enhance oil spill response capabilities; and

—$69 million for construction and upgrades of shore facilities, including $5 million to renovate an aircraft hangar in Cold Bay and $1.1 million for new fuel tanks in Sitkinak (pronounced "sit-ki-nak");
—$8 million to slow the retirement of one 378 foot high endurance cutter until it can be replaced.

A specific focus of mine today will be on the diminishing ice in the Arctic, the resulting implications on Coast Guard responsibilities, and the assets needed to respond. Scientists predict that the Arctic will be ice-free in the summer months by the late 2030s. Rarely used shipping routes, such as the Northwest Passage and Northern Sea Route, will likely be used more frequently. Exploration for natural resources is expected to intensify—the United States Geological Survey estimates that the Arctic accounts for about 13 percent of the world's undiscovered oil and 30 percent of its undiscovered natural gas.

The Commandant has been vocal about the trend of diminishing ice and what it means for the Coast Guard. In an article he wrote earlier this year for the U.S. Naval Institute Proceedings Magazine, entitled "The Emerging Arctic Frontier", he said:

"This change from 'hard' to 'soft' water, growing economic interests and energy demands, and increasing use of the seas for maritime activities by commercial, native, and recreational users demands a persistent, capable U.S. Coast Guard presence in the Arctic region. Our mandate to protect people on the sea, protect people from threats delivered by sea, and protect the sea itself applies in the Arctic equally as in the Atlantic and Pacific oceans and Gulf of Mexico and Caribbean Sea."

Unfortunately today, two of the Coast Guard's three polar icebreakers, the *Polar Star* and *Polar Sea*, have exceeded their intended 30-year service lives and are currently not operational. The *Polar Star* is being refurbished to re-enter service in 2013 for another 7–10 years and the Coast Guard plans to decommission the *Polar Sea*. We all saw the importance of the Coast Guard's icebreaking capabilities this past winter when the one active icebreaker, the *Healy*, which was built by Avondale Shipyards in Louisiana, broke ice to help deliver fuel to the people of Nome.

Many comprehensive studies of icebreaker requirements have been conducted over the years and all have concluded that a polar icebreaking fleet is essential to the national interest. The most recent study, commissioned by the Coast Guard and completed in 2010, concluded that a minimum of six icebreakers, three heavy and three medium, are required to fulfill Coast Guard statutory missions. However, while other countries like Russia and Canada are quickly building icebreakers to increase their presence in the Arctic, the United States has been slow to respond. The alarm has sounded, but we keep hitting the snooze button.

Senator Murkowski and I discussed the need for new icebreakers at our budget hearing with the Commandant in May, and I want to continue that conversation today.

I want to thank Senator Murkowski for inviting me to Alaska to chair this field hearing and thank the Coast Guard for providing us with such a dramatic location here at Air Station Kodiak. I now recognize Senator Murkowski for an opening statement before turning to our witnesses for their testimonies.

Senator LANDRIEU. Senator Murkowski.

STATEMENT OF SENATOR LISA MURKOWSKI

Senator MURKOWSKI. Senator Landrieu, thank you, first, for your commitment to come to Alaska to see and understand a little bit more about the role that the Coast Guard plays in our northern waters.

In my time in the United States Senate, I can honestly say that there is no other colleague in the Senate that has more of a commitment and a passion to our Coast Guard than you, perhaps maybe me. But between the two of us, I think it is recognized that there is a level of advocacy and a commitment and a care for the men and women of the Coast Guard.

So to be able to share some time in this hangar today, discussing what can be done to help those who are serving, and serving sometimes in some somewhat adverse conditions, giving them the as-

sets, the training, and truly the attention that they need, this is something that I want to continue our work together.

Your leadership has been critical, absolutely critical, in advancing some of the platforms that we need, some of the issues you mentioned, the housing, but the priority that you have placed on it is greatly, greatly appreciated.

And I appreciate the fact that you have come to Alaska. It is not easy to get here from Louisiana. And to come out to Kodiak here today and spend a couple days within the State is greatly appreciated. We recognize that time is valuable, and the time that you spend away from your constituents to come and understand others is greatly appreciated.

I want to also welcome you, Admiral Papp. It is indeed an honor and a pleasure to have you back here at Air Station Kodiak. I think this is the third summer now that you have made that commitment to come to Alaska to visit, to speak personally with, to observe, to better understand, and to truly lead. And your leadership is greatly appreciated.

I also appreciate the commitment you have given to the role here in the Arctic, and your leadership has truly made a difference.

I also want to recognize Admiral Ostebo, who is sitting behind you. Admiral Ostebo is head of the 17th District here, and he's doing a fine job for us. We appreciate your leadership as well, sir.

I also want to recognize Linda Papp. Ever ready, always working, and speaking strongly for the Coast Guard families, which is greatly, greatly appreciated.

And I do want to recognize some of the local officials that are here. Mayor Jerome Selby, Mayor Pat Branson, we have Representative Alan Austerman, some other folks from the community, I appreciate you being here.

I think it is significant, Senator Landrieu, that we're sitting in this hangar. The last time I was here, I was able to greet some of the crewmen who had just concluded several pretty fantastic rescues. We have, again, some adverse conditions that we deal with, but the role that the Coast Guard plays here in Alaska from a search-and-rescue perspective is something that is, quote, "made-for-TV". And in fact, you do see it on TV.

But it is the everyday role of these everyday heroes that are truly making a difference in the lives of Alaskans. So to be back in this hangar with so many is important.

As you look around the room, those frames that you see up there are from vessels that have gone down, and the Coast Guard has played a role—the name over there, you can't see the full name. The *Selendang Ayu* was a pretty tough tragedy here in Alaska. So some of the history around the walls is worth noting.

I do hope that as we leave this field hearing this morning, not only Senator Landrieu gets a little bit deeper appreciation of the role that the Coast Guard is playing, but how the other stepped-up activities in our northern waters is putting a level of responsibility on our Coast Guard.

We're going to be hearing from Mark Myers with the University of Alaska about some of the changes on the ground, in the water, that we are seeing. Our other witnesses that are here today will speak to the commercial shipping interest that they're seeing, the

level of activity that we're seeing in our northern waters that, again, puts the Coast Guard operations here in Alaska at a different level, beyond the protecting lives and property that we might see down here, but the position of enforcing our fisheries, preserving our living marine resources, promoting our national security, all exceptionally important within the mission.

Now, I believe that the Commandant will describe in more detail the 17th District area of responsibility stretches from the North Pacific Ocean to the Arctic Ocean and everything in between. It is a lot of water. It is one of the biggest areas of responsibility within the Coast Guard.

And along with the operational challenges that the Coast Guard currently faces, the future opening of the Arctic and increased activity that the Coast Guard currently faces in that area, I think we recognize there are challenges there. We appreciate that.

But these challenges must be met by the administration with adequate budgeting for the resources necessary to get the job done. And it's tough to be talking about budgeting back in Washington, DC, right now, because things are tough and tight. We recognize that. But I think we also recognize that we cannot shirk from that responsibility and the requirements that are out there.

Legacy Coast Guard assets in this State are aging. The current acquisition timeline leaves Alaska pretty far down the list for replacement of lost assets.

In the last few years, we have seen the decommissioning of the *Acushnet*. This was a medium endurance cutter (WMEC) with 67 years of service. It was homeported down in Ketchikan. The *Acushnet* patrolled the North Pacific and the Bering Sea. It could stay underway for weeks at a time.

Now the replacement for the *Acushnet* is going to be one of the FRCs that you mentioned, Senator Landrieu.

This is going to arrive in service in 2014, so we have a gap there. Another issue with the FRC is it will stay underway for only 5 days, which is the equivalent of our legacy patrol boats.

So while the FRC will be a stop gap solution until the OPCs are in service, it will be years before an OPC is eventually homeported here in the State.

In the meantime, our only WHEC, which is the *Munro*, which is stationed here in Kodiak, is quickly exceeding its useful life. It was commissioned back in 1971.

The *Munro* has the ability to spend up to 30 days at sea. It was fairly recently brought to Alaska, back in 2007 from Alameda, California. Before then, we did not have a WHEC.

In 2008, the *Munro* served a vital role in rescuing 20 souls from the sinking of the *Alaska Ranger* fishing vessel. Again, a pretty remarkable story.

But unfortunately, in the not too distant future, I worry that we may again be without a WHEC, and multimission responsibilities here in District 17 could overwhelm the Alaska-based assets. The *Bertholf*, which we will have an opportunity to see tomorrow, one of the NSCs that will replace the WHECs, will continue to patrol the North Pacific and the Bering, but it's going to do so from Alameda, California.

I am concerned about all of this because there was a recent Government Accountability Office (GAO) report found that reduced operational capacity of the WHECs has hindered mission performance. The report says that WHECs and the replacement NSCs are the only vessels in the Coast Guard capable of safely launching and recovering small boats and aircraft in the Bering Sea.

Now, it takes about 24 days roundtrip for the *Bertholf* to travel the 3,000 nautical miles from Alameda to here in Kodiak. That is 24 days that could be spent underway in the Bering Sea.

So I do have concerns, and I think it is appropriate to express them.

Recently, the North Pacific Fishery Management Council met here in Kodiak, and it came to their attention the District 17 is facing a 19-percent reduction this summer in the available major cutter days for fisheries law enforcement. The council is concerned with this reduction in cutter days because of the vital importance that the Coast Guard plays in enforcing the domestic fishing regulations and the international treaties. This is including the enforcement of the maritime boundary and the high seas driftnet violations.

We had an opportunity to talk about the challenges that we face, the limited capacity that we have, and truly so many of the issues that are out there.

But even without this reduction in cutter days, the Coast Guard already faces operational challenges of enforcing in this vast Bering Sea. Ten percent of this area within the Bering Sea is what they call a doughnut hole of international waters, where you have foreign factory trawlers who are quite often illegally overfishing.

I believe the case is clear that America needs an NSC homeported here in Kodiak when the *Munro* is decommissioned.

Now finally, and you touched on this briefly, Madam Chairman, this is the need, the desperate need, for icebreaking capacity.

We saw last year how important it is to have polar icebreaking capacity to respond to mission needs. It was reported everywhere from the New York Times to the local radio station here the heroic efforts of the cutter *Healy* as she provided a path for the *Renda* to bring much-needed fuel to the community of Nome and the surrounding villages in northwestern Alaska.

I think you are certainly aware, the Commandant is aware, of where we all stand on meeting additional icebreaking capacity, so I'm not going to take any more time here today, except to say that I am pleased that the administration has finally begun budgeting for a new polar icebreaker. I think we recognize it is far less than we all want, but we need to be working together to continue in the fiscal year 2014 budget a request for this critically important need.

As I convey my comments, I recognize that it may appear that I am not satisfied with what I have here in District 17, with the assets. I am grateful for the Coast Guard, the men and women, and the presence of all that you do. But I also recognize that we ask an extraordinary amount of the men and women who serve us. And we have an obligation to provide you with those assets that allow you to do the job, do it well, and do it safely, so that you return home to your families.

And I worry. I worry because that water is big and deep and broad, and many, many, many times dangerous. Whether you're on the sea or whether you are in a helo in the air plucking fishermen out of waves that are 20 feet high and gales that are blasting, we put you in harm's way, and we have an obligation to ensure that you have the assets to do what you do so honorably.

So I look forward to working with my colleague, and with you, Admiral, and with so many of our leaders.

And again I thank the Senator for her time and attention here in Alaska.

Senator LANDRIEU. Thank you, Senator.

And, Admiral, we will go right into your opening statement.

STATEMENT OF ADMIRAL ROBERT J. PAPP, COMMANDANT, U.S. COAST GUARD

Admiral PAPP. Good morning, Madam Chair, Senator Murkowski. It is great to be back in Alaska. I think I have visited Alaska and the 17th Coast Guard District more often than any other location in our Coast Guard, and that is because of the importance of what we do up here, how vital the Coast Guard is to Alaska and the Arctic. And also, it is a very challenging operation area as well, and I want to stay in touch with what our people are doing up here, the challenges they are facing, and their needs.

So I'm deeply appreciative to this subcommittee for its strong show of support through the budget process to make sure that our Coast Guard people are getting what they need. I also want to thank you for giving focus to Alaska and the Arctic, but more importantly, for your continuing support to our hardworking Coast Guard people.

I've stated before it is my highest honor to be able to work with them, to lead them, and to represent them.

And I also want to thank Captain Jerry Woloszynski, who is the base commander here, and Captain Melissa Rivera, who is the new air station commanding officer, for their support to put on this hearing today, and all my fellow coasties that are up here who have worked so hard in displaying the hospitality to all of us as we are visiting.

I appreciate the opportunity to speak with you today and the chance this week to show you those hardworking men and women in action. It is important to see and hear firsthand, just like I have done over the last three summers, what it is like to live and serve in one of our most extreme and challenging areas of Coast Guard operations.

I started out this weekend, and it has been a great Coast Guard birthday. I started out by going to Florida, where I presided at the commissioning of our newest patrol boat, the *Richard Etheridge*, produced in the great State of Louisiana, and then flew up immediately to Ketchikan, Alaska, where we had a chance to spend part of our Coast Guard birthday and attend the Blueberry Festival before proceeding over here and spending some of Coast Guard Day with our people here at Kodiak.

We have, of course, traveled yesterday up to Barrow, so we could observe Coast Guard operations in the difficult conditions that we find 300 miles north of the Arctic Circle, and observe some of our

people who are involved in Operation Arctic Shield, which is showing and demonstrating our expanding work up there, and demonstrating why it is so important for us to be there.

During this 9-month operation, we have deployed the NSC, the *Bertholf*, and we are also celebrating *Bertholf*'s commissioning of 4 years ago this week, and we will get a chance to see her and her crew in operation.

I can report that our Coast Guard is on station and ready to meet today's traditional mission demands, like protecting Alaska's $3.1 billion fisheries industry, while we also prepare for the future.

Activity in the most remote reaches of Alaska continues to evolve and grow, including planned drilling operations in the Chukchi Sea and the Beaufort Sea. Foreign tankers will be using the Northern Sea routes, which transit through the Bering Strait and into the Bering Sea, and cruise liners will continue to press even further into the Arctic.

We must continue to work to refine our ability to provide and then support a persistent operational presence during this period of increased human activity or environmental risk.

And that is why Operation Arctic Shield is so important to us. During this 9-month operation, we'll be deploying the *Bertholf*, as I said, and two of our 225-foot oceangoing, ice-capable buoy tenders. We have also forward deployed two of our H–60 helicopters to Barrow and will test and deploy the spilled oil recovery system for the first time north of the Arctic Circle, and will continue to examine the requirements to protect living marine resources in the higher latitudes.

We will also continue to evaluate the best methods by which to manage the waterways in the area.

Given the challenges of operating in this region, we know we can't do it all by ourselves. This takes a whole-of-government approach, and we're working very closely with other Federal agencies, and State, local, and tribal partners.

We must also carefully consider the resource requirements needed to sustain operations in this environment.

I'm reminded of our earliest days of operations in Alaska. I'm a student of history, and in the late 1800s, in fact starting in 1867, when our first cutters came up to Alaska, they plied these waters most often under sail, but they also had coal-fired engines.

We didn't have a lot of infrastructure up here, and we even have historic records that show our crews going ashore in Unalaska and mining coal so they could keep their ships going.

So while we didn't have permanent infrastructure, over time, because of the increased demand of deploying cutters up here, a coaling station was built in Dutch Harbor on the island of Unalaska and served for many years and still serves as a place for logistic support for our cutters operating in the Bering Sea.

So we still have limited infrastructure in Alaska today, but we have an advantage over our predecessor cutters that were up in our early history. We now have remarkably capable cutters able to operate offshore with greater endurance and autonomy.

Thanks to your continuing support and that of the administration, we are currently building a very capable offshore infrastructure, our NSCs. They don't rely upon a supply of coal to operate

and conduct these missions. And in fact, these cutters can carry all the supplies they need to provide a sustained presence, and they can carry and launch both small boats and helicopters to conduct the full range of Coast Guard missions, and also can provide a robust suite of command and control communications capabilities.

That is why the completion of the NSC fleet is critical to our ability to continue to meet our mission demands in this area, and why it has continuously been my No. 1 priority for our acquisitions money.

And of course, you will see the *Bertholf* on Tuesday, and you will get a chance to experience firsthand why her tremendous capabilities are in such need up here in the Bering Sea.

Additionally, with the support of the Congress and the administration, we are also making smart investments now with the fiscal year 2013 budget to ensure we are ready to operate effectively in the Arctic in the future. The fiscal year 2013 budget provides funding to expand and upgrade the aviation facilities at Cold Bay, which you will also see this week. And it also initiates the acquisition of a new polar-class icebreaker.

The budget also provides for operational funding for our medium polar icebreaker *Healy*, and it reactivates the *Polar Star*, so we can get her back into service in 2013.

We remain committed to Alaska, as borne out by our investments for the future and our operations today, and our presence here each summer to make sure we are providing the type of resources that our people need to operate in this environment.

And finally, I can't forget our hardworking coastguardsmen and their families who serve here, many in remote locations.

I thank you for recognizing Linda, both of you. She has been working very hard, and I am very proud of her, because she is focused on housing concerns and childcare services for our families.

Just during this trip alone, she has met with housing officers here and in Ketchikan, and I'm very proud to report that in Cordova, as you know, we recently constructed 26 brand-new homes for our people to alleviate a housing shortage there.

I'm committed to providing for the needs of the 1,600 Coast Guard active-duty families stationed throughout Alaska, and we appreciate your continued support, along with the administration, in making the welfare of our military families a top priority.

In the Coast Guard, we work as a crew, but we serve as a family. We will continue to find that balance between maintaining our operations, recapitalizing our fleet and our infrastructure, and ensuring the needs of our Coast Guard families are being met. So it is with deep appreciation that I thank you for putting a spotlight on those needs, so we can continue to work together to make sure our Coast Guard people are getting the tools they need.

PREPARED STATEMENT

So I thank you for the opportunity. I look forward to your questions.

[The statement follows:]

PREPARED STATEMENT OF ADMIRAL ROBERT J. PAPP

Chairman Landrieu, Ranking Member Coats, and distinguished members of the subcommittee, thank you for the opportunity to testify today. I am honored to join you in Alaska to discuss the Coast Guard's Arctic responsibilities and operations. This summer we are preparing for Arctic activity driven by the oil industry's planned drilling operations in the Chukchi and Beaufort Seas. Partnering closely with Federal, State, local, and tribal government partners, and working with industry as the regulated parties, the Coast Guard is ready for operations this summer in the Arctic with Operation Arctic Shield. The lessons we learn this year will inform our planning and strategy, to ensure we remain always ready to ensure the safety, security and stewardship of the emerging maritime frontier of the Arctic.

OPERATION ARCTIC SHIELD 2012

Arctic Shield 2012 is a three-pronged interagency operation in Alaska's coastal Arctic domain consisting of outreach, operations, and assessment of capabilities from February through October 2012. Outreach is comprised of delivering education, awareness and health services for Arctic communities and outlying native villages. Operations involve deployment of major cutter forces, air assets, communication equipment, and mission support to conduct the Coast Guard's missions. Assessment of capabilities involves an analysis of our front-line operations and mission support assets in Arctic conditions. Additionally, an oil spill contingency exercise in Barrow, Alaska, will test Coast Guard and Navy skimming equipment launched from a 225-foot Coast Guard buoy tender. Arctic Shield 2012 has been carefully tailored to deliver the appropriate set of capabilities to this remote area. I am very proud of our team in the 17th Coast Guard District for bringing the Arctic Shield plan to fruition.

The following unclassified schematic outlines our planned force lay down for Arctic Shield 2012. The graphic demonstrates our key challenge—moving Coast Guard resources from our long-established bases in south Alaska to the emerging frontier of northern Alaska.

For the first time, we have two MH–60 helicopters in Barrow standing the watch and ready to respond. This means that, readiness and weather permitting, we can meet a 30-minute launch window for imminent missions such as search and rescue, environmental protection and law enforcement. The following photo shows the MH–60s in their leased hangar in Barrow.

We have deployed USCGC *Bertholf*, the first National Security Cutter, to the southern Arctic region, providing persistent operational presence, and command and control, in areas where we lack the permanent infrastructure of a coastal Sector. We have also deployed two light-ice capable 225-foot ocean-going buoy tenders to increase offshore operational capability in the region.

THE COAST GUARD IN ALASKA AND THE ARCTIC REGION

The Coast Guard has been operating in the Arctic Ocean since 1867, when Alaska was just a territory. Then, as now, our mission is to assist scientific exploration, chart the waters, provide humanitarian assistance to native tribes, conduct search and rescue, and enforce U.S. laws and regulations.

In Alaska, Coast Guard aircraft and vessels monitor more than 950,000 square miles off the Alaskan coast to enforce U.S. laws. We patrol an even larger area of the north Pacific Ocean to stop large-scale high seas drift netting and other illegal fishing practices, including foreign incursions into the U.S. Exclusive Economic Zone. We also conduct maritime safety and environmental protection missions in the region.

To protect the Arctic environment, we are engaging industry and the private sector to address their significant responsibilities for pollution prevention, preparedness, and response. Recognizing that pollution response is significantly more difficult in cold, ice, and darkness, enhancing preventative measures is critical. Those engaging in offshore commercial activity in the Arctic must also plan and prepare for emergency response in the face of a harsh environment, long transit distances for air and surface assets, and limited response resources. We continue to work to improve awareness, contingency planning, and communications. We are also actively participating in the Department of Interior-led interagency working group on Coordination of Domestic Energy Development and Permitting in Alaska, (established by Executive Order 13580), to synchronize the efforts of Federal agencies responsible for overseeing the safe and responsible development of Alaska's onshore and offshore energy.

While prevention is critical, the Coast Guard must be able to manage the response to pollution incidents where responsible parties are not known or fail to adequately respond. In 2010, we deployed an emergency vessel towing system north of the Arctic Circle. We have also exercised the Vessel of Opportunity Skimming System (VOSS) and the Spilled Oil Recovery System (SORS) in Alaskan waters, but we have yet to conduct exercises north of the Arctic Circle. Both of these systems enable vessels to collect oil in the event of a discharge, however, these systems have limited capacity and are only effective in ice-free conditions. We plan on again testing and deploying the SORS in the vicinity of Barrow in a Field Training Exercise this summer during Arctic Shield 2012.

Fisheries are also a major concern. The National Marine Fisheries Service, based upon a recommendation from the North Pacific Fisheries Management Council, has imposed a moratorium on fishing within the U.S. Exclusive Economic Zone north of the Bering Strait until an assessment of the practicality of sustained commercial

fishing is completed. The Coast Guard will continue to carry out its mission to enforce and protect living marine resources in the high latitudes.

We are employing our Waterways Analysis and Management System to assess vessel traffic density and determine the need for improved aids to navigation and other safety requirements. We are also moving forward with a Bering Strait Port Access Route Study, in coordination with our international partners, which is a preliminary analysis to evaluate vessel traffic management and appropriate ship routing measures.

The Coast Guard continues to support international and multilateral organizations, studies, projects, and initiatives. We are actively working with the Arctic Council, IMO and their respective working groups. We are leading the U.S. delegation to the Arctic Council Oil Spill Task Force that is developing an International Instrument on Arctic Marine Oil Pollution Preparedness and Response. We are also conducting joint contingency response exercises with Canada and we maintain communications and working relationships with Canadian and Russian agencies responsible for regional operations including Search and Rescue (SAR), law enforcement and oil spill response. We maintain bilateral response relationships with Canada and Russia, and last month we hosted representatives from the Russian State Marine Pollution Control Salvage and Rescue Administration (SMPCSRA) to sign an expanded memorandum of understanding and joint contingency plan to foster closer cooperation in oil spill response. We will continue to engage Arctic nations, international organizations, industry, academia and Alaskan State, local, and tribal governments to strengthen our partnerships and inter-operability.

Our engagement with Alaska Native Tribes continues to be highly beneficial. Our continued partnership has made our operations safer and more successful. We are working hard to ensure tribal equities are recognized, and that indigenous peoples and their way of life are protected. We look forward to continuing to strengthen our partnerships with our Alaskan Native partners.

The Coast Guard continues to push forward and assess our capabilities to conduct operations in the Arctic. Since 2008, we set up small, temporary Forward Operating Locations on the North Slope in Prudhoe Bay, Nome, Barrow and Kotzebue to test our capabilities with boats, helicopters, and Maritime Safety and Security Teams. We also deployed our light-ice capable 225-foot ocean-going buoy tenders to test our equipment, train our crews and increase our awareness of activity. Additionally, each year from April to November we have flown two sorties a month to evaluate activities in the region

Looking ahead, the Coast Guard's regional mission profile has evolved significantly. Increasing human activity will increase the significance and volume of maritime issues, such as freedom of navigation, offshore resource exploration, and environmental preservation.

THE COAST GUARD IN CONTEXT OF NATIONAL ARCTIC POLICY

U.S. Arctic policy is set forth in the 2009 National Security Presidential Directive (NSPD) 66/Homeland Security Presidential Directive (HSPD) 25. For the past 4 years, as we are today with Arctic Shield 2012, we have been conducting limited Arctic operations during open water periods. However, we face many challenges. Some Arctic operations demand specialized capabilities and personnel trained and equipped to operate in extreme climates. Our assessments of the Nation's requirements for operating in ice-laden waters consider infrastructure requirements to support operations, and requirements for personnel and equipment to operate in extreme cold and ice.

Given the scope of these challenges, we have been conducting oil-in-ice research since 2010 to evaluate, develop, and test equipment and techniques that can be used to successfully track and recover oil in any ice filled waters, and have explored promising technologies, such as heated skimmers. The Coast Guard's strategic approach is to ensure we pursue the capabilities to perform our statutory missions so we can ensure the Arctic is safe, secure, and environmentally sustainable. This strategy is consistent with our Service's approach to performing its Maritime Safety, Security and Stewardship functions.

CONCLUSION

Arctic Shield 2012 is an appropriate plan to meet projected mission requirements this year. Moving forward, we will continue building our strategy using a whole-of-government approach that will inform national dialogue and policy development for this critical region.

While there are many challenges, the increasingly open Arctic Ocean also presents unique opportunities. We look forward to working with the Congress on how

our Coast Guard can continue to support our national Arctic objectives, protect its fragile environment and remain Semper Paratus—Always Ready in this new ocean.

Thank you for the opportunity to testify today. I look forward to your questions.

ARCTIC: COAST GUARD MISSION

Senator LANDRIEU. Thank you. I will start out with about 5 or 6 minutes of questions, turn it over to Senator Murkowski. We may go through a second round, because there are some important things we would like to get on the record.

We have all mentioned this in our opening statements, but I would like to give you an opportunity to take 1 minute to describe in even more detail for the subcommittee how the retreating Arctic ice will dramatically change the Coast Guard's responsibilities, looking into the future. The northward migration of fish stock potentially; offshore oil exploration sites, which you mentioned; the extraordinary increase in commercial shipping that I think we have not really contemplated or really fathomed how significant that could be; and how these developments are affecting Coast Guard plans for your budget, given the pressures on your budget, yet at the same time this growing very new and extraordinary, unprecedented, opening of these waters.

If you could just hit a few more details on that, so that we can try to grasp the real needs that you have.

Admiral PAPP. Thank you, Chairman.

Many people, as I travel around the country, ask the same question. The good thing is there is a lot of interest in the Arctic now. I think the work of this subcommittee, the two of you, some speaking engagements I have had, are causing people to ask the questions now.

And when I try to relate this to a landsman, someone who is from the interior of the country who doesn't quite understand, is to think about if your city, or your county, or your parish incorporated a new portion of land or gained some additional space and area, but you never increased your police force or you never increased your fire department. They would take on added responsibilities, added burdens, and they would have to spread the existing resources a little bit thinner in order to accomplish the mission.

So up here in the Arctic—and first of all, this country, the United States, has the largest maritime exclusive economic zone in the world, 3.3 million square miles of exclusive economic zone. And fully a third of that is here in Alaska.

When the ice was covering the Arctic most of the time, there was no human activity. We didn't have to deploy any Coast Guard resources up there. But now during the summer months, when we are having much more open water, soft water, as I refer to it in the article, we have responsibilities up there. We're the maritime law enforcement, first responder service for this country. So we have the authorities; we have the responsibilities; and we need to set priorities and distribute our resources up there to take care of an emerging mission and operation in those waters.

So, with no significant increase in our resources right now—in fact, sort of a little bit of a budget that is reducing some of our operational capability and capacity, what we are doing is we are

making reasoned decisions across our mission sets and deciding where our highest priorities are.

So, obviously, our WHECs and now our NSCs are used for fisheries, search and rescue, law enforcement, drug interdiction, and migrant interdiction. We still have all those responsibilities, but we are deploying resources up here in the summertime to account for the increased human activity.

Most of the year we have one WHEC in the 17th Coast Guard District. As we speak today, we have three under the tactical control of Admiral Ostebo. The *Rush*, one of our WHECs, is prosecuting a high-seas driftnet case, almost all the way over to Japan right now, because they have been pursuing this vessel.

We have the *Munro*, which is patrolling the maritime boundary, protecting the fisheries in the Bering Sea.

And the *Bertholf* will be on her way up to the Arctic to be up there on standby for operations that are occurring off the North Slope.

So it is like I always tell people, the Coast Guard doesn't have resources to do 100 percent of every mission that we have, so what we do is we make reasoned decisions based on risk and priorities on a daily basis, and allocate those ships and aircraft that we do have to what we consider to be the highest mission. And right now, the Arctic is one of our highest missions.

ARCTIC: DRILLING BY SHELL

Senator LANDRIEU. Thank you. Let me put this into the record, which I think may be shocking to people from Alaska that were focused but maybe not as focused as we were in the gulf when this is happening, but as you all know, in 2010, 2 years ago, the Deepwater Horizon exploded in the gulf.

Now, we drilled 40,000 deepwater wells relatively safely in the Gulf of Mexico. I like to say, as an advocate for the industry, but also for good environmental practices, that until the Deepwater Horizon, there was more natural seepage of oil into the ocean than oil ever spilled from a rig. The Deepwater Horizon blew those numbers up and put 5 million barrels of oil into the gulf.

It may be shocking, Senator, to think about this, but 47,000 personnel and 7,000 vessels responded to that accident. I mean, we're sitting in the largest airbase here, and we only have 1,000 personnel. I don't think you have nearly 7,000 vessels anywhere close. The Deepwater Horizon response had to be done immediately.

I think the Nation has to really come to grips with the exploration opportunities for oil and gas, the great need of the Nation to have our own domestic resource, but the extra responsibility that comes with that to provide the vessels and the manpower to take care of something if, like in that situation, something went terribly wrong.

So could you talk for 1 minute about Shell's hopes to begin exploratory drilling? Give us just a little bit of an update about what is going on, and how you and the Coast Guard plan to be at the ready in the event that something terrible happened.

We hope it doesn't. We know the technology is good. We know there are containment measures.

But like every industry, you have to have some fallback safeguard, and the Coast Guard is it.

Admiral PAPP. Yes, ma'am.

Taking lessons learned from Deepwater Horizon, I think there are some things that are directly applicable to the challenges of drilling up in the Arctic. We have had a chance, along with the Department of the Interior, to review the response plans that Shell has put forward.

When Deepwater Horizon occurred, the drill rig, and that was a production well, but the drill rig was out there and basically was there by itself, for the most part.

Shell is going to be drilling in much shallower water, about 150 feet as opposed to 5,000 feet. You don't necessarily have to have just remotely operated vehicles up here. You can actually put divers down.

And Shell is going to have up there 22 vessels that are all designed either as ice vessels, as anchor vessels, as skimmers, response vessels. They will have everything in place and ready to go in an overabundance of caution, in case something happens.

First of all, looking at it from a layman's point of view, it is a much easier operation in 150 feet of water. And they believe that the reservoirs that are up there are under much less pressure than down on the gulf.

So to a certain extent, you're dealing with apples and oranges. But even saying that, we're looking at the worst-case discharge possibility, and I think Shell has well-prepared for that. The Coast Guard has had an opportunity to review their response plan, along with the Department of Interior, the Bureau of Safety and Energy Enforcement (BSEE).

And all of us will need to sign off on that and approve that before they start drilling.

Most of their vessels are here already. They do have one vessel, which is an Arctic containment system, which is their tertiary response system in the unlikely event of a spill. That is still down in Bellingham, Washington, right now, going through review by the American Bureau of Shipping and our Coast Guard inspectors. There's still a work list of things to be done on that before we can certify that as safe to operate.

And until the Arctic Challenger is released and gets up here, they will have to wait until that drilling begins. But they have primary, secondary, and tertiary systems to deal with any possible discharge up there.

And, quite frankly, I have to say I am impressed with the amount of effort, work, and commitment of resources that Shell has done.

POLAR ICE BREAKERS: NUMBER OF VESSELS

Senator LANDRIEU. Thank you.

My final question for this round, again, is to focus on the polar icebreakers. It is a very important investment and significant investment that our country is going to have to make. A recent study sanctioned by the Coast Guard, named the "High Latitude Study", calls for a minimum of three heavy polar icebreakers and a minimum of three medium polar icebreakers.

How many new heavy polar icebreakers does the Coast Guard intend to procure? What would be the future implications for the budget? And if you could comment on what some of our competitors, China and Russia, are doing in this area, and really how far behind we are right now in this initiative?

Admiral PAPP. Yes, ma'am.

First of all, I need to focus on what we can do today to make sure we have icebreaking capability and capacity for our country.

In the law, the Coast Guard is responsible for maintaining our icebreaker fleet. And as I stated, we are in woeful condition right now. *Healy* is the one bright spot, because *Healy* is only about a dozen years old and is in good shape. And thank goodness we had that ship to call upon last year when we had the situation up in Nome.

You both are fully aware of the dreadful condition of *Polar Sea* and *Polar Star*. They are well past their service life, very difficult and expensive to maintain. And I have had limited funding in order to be able to deal with them.

The bright spot there is the operating money has been transferred back into the Coast Guard's budget in fiscal year 2013 from the National Science Foundation, which will give us sufficient funds to operate *Healy* properly and to operate one of the Polars.

We also received some money in past budget cycles to put *Polar Star* back into service. *Polar Star* is in the shipyard down in Seattle right now undergoing renovation, and we will have her back in service in 2013.

So that'll give us one heavy breaker and one medium breaker, and that is my bridging strategy over the next probably decade until we get the new polar icebreaker built. And once again, I look at that optimistic——

Senator LANDRIEU. How much do those new polar icebreakers cost, approximately?

Admiral PAPP. We are estimating anywhere between $800 million to $1 billion, looking across the world at the price that we see in other countries and what Canada is allocating to build their new icebreakers.

Senator LANDRIEU. Do you know how many Canada has, how many Russia has, and how many China has?

Admiral PAPP. I would have to get back to you with the exact numbers for the record.

[The information was not available at press time.]

Senator LANDRIEU. They have more than we do?

Admiral PAPP. Absolutely. Russia has in the neighborhood of a dozen heavy icebreakers. Canada, I believe, has four right now heavy icebreakers. And of course, we have the two, but they are out of service right now. We are rapidly working to get *Polar Star* back and active.

Senator LANDRIEU. I'm going to turn it over to Senator Murkowski, but one of the challenges that our subcommittee has, and the Senator and I have talked about this publicly and privately many times, is the Federal Government requires us to basically pay cash up front for these investments. When we build an aircraft carrier, when we build a billion-dollar ship, there has to be a better way to do this, because we have to take that money out of the

Coast Guard budget. We have to find the money in the Coast Guard budget to build this polar icebreaker, this new fleet.

We're going to have to figure out a better way, Senator, to do that.

I'm going to ask, when the Senator is finished, one or two more questions about that. But there might be some partnerships with the private sector, there might be some foreign partnerships, allies, that we can maybe share some of these expenses with. There has to be some way we can, particularly with the crunch that is coming to our budget, figure out a way.

I know lots of people like to say we have to do more with less, but sometimes you just can't do more without more. I think this is an example of what we're running into here.

And I turn it over to you, Senator.

OPERATION ARCTIC SHIELD

Senator MURKOWSKI. Senator Landrieu, I appreciate you focusing so much of your questions on the issue of icebreaker and icebreaking capacity. It is extraordinarily important to us here in the State, but it is extraordinarily important to us as a Nation. We are an Arctic Nation. And as an Arctic Nation, to know that we do not have an icebreaker that is a polar-class icebreaker, a heavy icebreaker, given all that is happening, is really quite remarkable.

And, Commandant, you and I have had an opportunity to discuss the situation with the *Healy* last year and how close we were as a Nation to not even having the *Healy* accessible to us, that you were in a situation where you effectively had to turn down a request to send the *Healy* down on a mission to Antarctic.

Had you made the decision another way, when the people of Nome needed help, needed assistance at a very difficult time, we would not have been able to provide the level of assistance, and to help those people out, because our one medium-strength icebreaker would not have been available. So think about the what-ifs.

And it's not a situation that I think we want to be in. Again, we are in Arctic Nation, but sometimes you wouldn't know it when you look at the assets.

I had an opportunity to be with you Barrow yesterday, to talk with some of the Coast Guard's men and women that are up north right now, working that Barrow mission. And I found it interesting that some of those that I was speaking with yesterday were coming back today, coming back home.

So they are working up north; they are living down here. And for those who haven't checked their maps, the distance between the Barrow and Kodiak is 820 nautical miles.

So when we appreciate how we are going to have a Coast Guard that will be serving the area with the Arctic Shield Operation, I think it is important to recognize that there's a financial strain here. To move these men and women back and forth is going to be challenging. To move the assets back and forth is going to be challenging.

If you're staging out of a Dutch Harbor, it is 1,125 miles. So whether you're moving the *Bertholf* up or you're going by helicopter, you're going by C–130, I think it is a recognition we're deal-

ing with some considerable issues with the distance. And that leads to cost as well.

I would like you to address just generally how the Coast Guard's preparedness in moving forward with Operation Arctic Shield this summer with the assets that we currently have—we mentioned the *Bertholf* is moving her way up north. I think you mentioned two H–60s that would be moving back and forth.

But as we talk about how we manage the waterways, how we move the necessary personnel, can you describe to Alaskans how well-manned, how our capabilities are at this point for the operations this summer?

And then if you can then address the practical reality that we do not have a polar-class icebreaker, whether or not the mission capability is compromised at all, because we do not have that icebreaking capacity for whether it is Arctic Shield or the other mission sets that the Coast Guard has here.

Admiral PAPP. I have three levels of concerns. First of all is tactical. What are we doing this summer on the basis of that activity that is up there? What are we doing to prepare ourselves for perhaps the next decade question? And then what is the long-term plan up there?

The President, through directives, has challenged all of Government to look at the Arctic and start thinking about and planning for what we need to do in the future. And because of the Coast Guard's broad authorities and responsibility, we are taking that very seriously.

We have devoted staff to this effort. And we have also devoted—even though Arctic Shield, this is the first time we're doing that operation. We did something called Arctic Crossroads for 3 years before that. We have known that our activity is going to increase up there, so we have been taking our equipment up, experimenting, seeing how it performs, and trying to learn more about the operating environment as the activity starts to flow up toward the North Slope.

Another important aspect is getting to know the people up there. That is their world. So the people who inhabit the villages, we have been engaged in outreach with them, to help us understand the culture and the environment up there, because they have literally thousands of years of experience and history with the operating environment, and that helps us.

So for right now, we are well-prepared, because like we always do traditionally, we have multimission assets that we can deploy that are very capable and that are sufficient for the level of human activity that is going on this summer and perhaps for the next three or four summers.

But as we finish up Arctic Shield this year, we will do a hot wash of that entire operation, and decide what went well, what didn't go as well, what sort of resources we might need for the next year. Then we can begin that planning evolution.

At the same time, that feedback will go back to Washington to our staff that is working at headquarters, developing our Arctic strategy, our long-range strategy for what we need to do up here. And that will inform our future budget years, how we start plan-

ning for resource proposals for perhaps more permanent infrastructure.

As was noted during the opening statement, we don't expect it to be ice-free during the summertime probably until about 2030. But it is still going to freeze up during the wintertime. And there will be ice that we will have to deal with during certain periods of the year.

So what we need during those periods of the year when the ice is there is some sort of short access that can only be provided by an icebreaker.

So our multimission assets, our helicopters, our fixed-wing aircraft, the NSC, these are all very versatile assets that we can apply during the temporary times that there is human activity up there. But there'll be other times when things start freezing up, as happened last fall with Nome, that we need to have that assured access of an icebreaker.

I wouldn't say I am comfortable at this point, but we do have *Healy* that is on call. And as I said, by next year, we will have *Polar Star* back in service, which will give us two icebreakers. Not an abundance of resources, but enough that will make me comfortable that we will be able to respond to the types of challenges that we are facing over the next 10 years as we continue to work our way forward to determine the other resources that we need.

CUTTERS: REPLACING LEGACY VESSELS

Senator MURKOWSKI. Until the *Polar Star* is back in the water, I sure hope that we are able to keep *Healy* up here and not send her down on a research mission to Antarctica.

That is just my ask. I am sure that you have thought of that as well.

I mentioned in my opening remarks that the legacy vessels, and how we deal with what I would describe as the gaps that are out there. Two of the vessels that are covered in this GAO report are homeported here. I mentioned the *Munro*, the WHEC, but we also have the *Alex Haley* that is here.

The *Alex Haley* is 41 years old. The *Munro* is 45 years old.

Can you give me some sense as to what the plans are to replace these legacy vessels?

Admiral PAPP. Yes, ma'am.

Fortunately, with the support of the administration and the strong support shown by this subcommittee, the national security project is moving forward. We will be prepared to award the contract for NSC No. 6 within the 2013 budget as soon as we have an approved budget. And we already have long-lead materials on order for No. 6.

And as was indicated with the opening statement, for the fiscal year 2013 budget, there has also been long-lead money put in there for No. 7, which should help us along as well.

We hope to build out eight of the NSCs, which will replace the 12 WHECs that we currently have right now. And then we will immediately get into what is called the offshore patrol cutter, or the OPC.

We just got out a request for proposal on the OPC, and that project is on schedule. And we hope to be able to award the construction for the first OPC in the fiscal year 2015 budget.

So ultimately, though, we will have—today we have 41 major ships. They will be replaced by 33 major ships when the project is done.

But they will be more capable ships. But they won't be able to be in as many places as the legacy fleet.

Having said that, the legacy fleet, many of them were only getting about two-thirds of the underway days that we programmed for, because of major casualties and breakdowns.

So the best solution is to get these new ships built as quickly as possible, because they will be more reliable and substantially more capable than the ships they are replacing.

Senator MURKOWSKI. I mentioned also in my statement about the loss of underway days, the importance of these cutters actually being underway, conducting the mission, and the fact that the outside cutters are spending 25 to 30 days underway every deployment as they transit from, in this case, from California up here.

So the desire, the importance, to have these vessels homeported here I think it is an issue I think we look at as we try to address how the mission is fulfilled.

Do you have any sense in terms of when the decommissioning of the *Munro* or the *Healy* may come about?

Admiral PAPP. I am trying to keep them going as long as we can.

Senator MURKOWSKI. I appreciate that.

Admiral PAPP. If my recollection is correct, *Munro* is the youngest of our WHECs and, as you note, is in excess of 40 years old.

A lot of people, when you speak to our citizens and you say 40, 45 years old, they don't perceive that as being very much. But in the life of a ship, that really makes it well beyond senior citizen status.

The Navy's service life is usually about 25 years for a ship. We in the Coast Guard work our ships very hard in very challenging and very demanding conditions. So these 12 WHECs that we had have had a pretty rough life, spending a lot of time in the Bering Sea.

And you have what amounts to—because they were built in the 1960s, there is a lot of 1950s technology that is still on these ships. Many components that you just can't get spare parts for nowadays unless they are hand manufactured.

So when we have a breakdown, part of the problem is it takes us so long to get replacement parts and put them back into service that we lose those underway days and our effectiveness out there.

Senator MURKOWSKI. I appreciate the need, the desire, to get our new vessels on, but, again, I'm worried about the gaps, where we have ships that are decommissioned without that replacement vessel on-site in the water.

And I think those that rely on our Coast Guard are looking very critically at the timing as well. So I just put that out there.

Madam Chairman, I probably have a couple more, but I will turn it to you.

Senator LANDRIEU. I would like to follow up on this technology issue.

I had the privilege, the responsibility and privilege, to go down to Guatemala as chair of the Homeland Security Committee and look at some of the drug interdiction situations down there. I have to just say for the record, it is shocking to see the technology that the drug cartels have.

New materials, submarines that are undetectable, running drugs from Mexico through Guatemala into the United States, and we are operating our boats, Senator, with 1950s technology.

I mean, we are trying to keep up with other countries. We also have to keep up with the drug cartels. I know that, Admiral, you were restricted in your budget, and the Senator and I have some restrictions. But where there's a will, there is a way. We are going to have to find a way to get the assets for this Nation that we need to protect our homeland and to monitor the great industries that we have responsibility for that produce wealth and opportunity for our country.

It is very concerning to me, and I want to ask you this, because I'm trying to really understand, as we change our fleets, how can you sort of compare the OPCs for operations in Alaskan waters, how will the capabilities compare to the NSC?

Can you just explain that, and make sure that we are building the kind of ships that Alaska needs? Because the needs of the Gulf of Mexico are going to be a little bit different, of course. Our waters are a little tamer, as we don't, of course, have any ice anywhere around. Although we can have terrible storms and hurricanes, I want to make sure that our country is building the right kinds of ships for the east coast, the west coast, the gulf coast, and for Alaska.

So do you have any concerns at all that the plans are not providing the assets that Alaska and our Arctic boundaries need?

Admiral PAPP. Ma'am, when we finish this shipbuilding project, we'll basically have two major cutters, the NSC and the OPC.

Today we have two classes. We call them the WHEC and the WMEC.

Our challenge is the WMECs that we have right now are incapable of operating in the Arctic and the Bering Sea. They cannot take the seas. We can't launch small boats, we can't launch helicopters from them, because they just can't take the conditions that are found up in the Bering Sea and Gulf of Alaska.

Consequently, we moved all our WHECs a number of years ago, took them off the east coast, and moved them to the west coast, because, particularly for Alaska patrol, Bering Sea patrol, the WHECs are the only ships that we have been able to use year-round up here.

When we get to this new fleet, in the requirements that we put out for the OPC, which is the WMEC replacement, we put requirements in there for it to be able to operate, launch small boats, land and launch helicopters in sea state five, which will allow it to operate in the Bering Sea.

So there'll be times when we are able, in the future, even though we will have only a reduced number, 8 instead of 12, the high-end ships will have the opportunity, the option, to send the OPC up here as well.

In fact, we have plans to station two of our OPCs up here in Alaska, hopefully here at Kodiak.

So that will give us much more versatility in where we can deploy those. Right now, there are only, basically, 12 ships that we can send up here. When we get the new fleet built out, any of the ships we have in those 33 will be able to come up here.

Obviously, in the worst weather, you want the NSC up here, because that gives us our best capability for the conditions that are found up in Alaska.

POLAR ICEBREAKERS: LEASING PROS AND CONS

Senator LANDRIEU. I want to say that we're getting some pushback, Senator, from some people in Washington that think that the Navy is the only operational group that should have these very large ships. But I want to go on record strongly, and I'm a very big supporter of the Navy and the need for them to have the kind of ships that they need, but we just cannot patrol waters—we are not patrolling waters within just 15 miles, as you know, of our coastline.

We have up to 200 miles as our economic zone. Under the Law of the Sea Treaty, if we can ever get that resolved, we may have up to 600 miles, I understand, here off of the coast.

So this is not just patrol boats going up and down a few miles off the coast. These boats need to be seaworthy and have a very different mission, of course, than the Navy, but they have to be big and strong and able to maintain.

My last question, and we talked about this, Commandant, about the pros and cons of having the private sector build an icebreaker and lease it back.

Both the Senator and I are very concerned about not getting one or two but several, and getting them much more quickly than the plans that we have in place. I think you are making the best lemonade you can out of the sort of lemon situation that you have been given, but what are the pros and cons of having the private sector build an icebreaker, leasing it back to the Coast Guard?

I know there are some disadvantages in your mind, but what might be some of the disadvantages and advantages, if you could?

And I'm ready to close out and go to the next panel, unless you have——

Admiral PAPP. Yes, ma'am.

I think the biggest con is that the Coast Guard generally builds and operates ships for 30-plus years. It is something we can rely upon. It is a capability the country knows it has.

And if you build a ship and you invest in it, if you were to lease over that time period, it ends up costing you way more.

And I know your interest in this, so we had a chance to do a rudimentary business case analysis, and also look at the legal implications of what missions we could conduct for the Coast Guard under Coast Guard-owned or leased.

I would say, at this point, because we are struggling right now just to have one polar icebreaker, there's a certain level we want to have Coast Guard-owned, because we can rely upon that.

And it's sort of like, if I can use a very simple illustration, a number of years ago, I wasn't certain whether I was going to retire

or not. And we had one car that we owned, and we know that's ours and we can rely upon it all the time. But because I wasn't sure what was happening, we leased another car.

We spent a lot of money on that lease. And at the end of the day, it wasn't ours, and we had to turn it back in, so we could fall back on the car that we owned.

I want to have an icebreaker that we own, maybe a couple icebreakers that we own. And then I think leasing is more of an option, in my mind, when you need surge capabilities for a couple years and you can go out and perhaps invest in a lease that gets you through a tough period. But then at the end of the day, you don't have the responsibility for maintaining it afterward.

So right now I am focused on procuring, getting the appropriation, and building an icebreaker that we will have for a good three decades and be able to rely upon, and use it for the full set of Coast Guard missions.

And that brings in the other argument, the legal argument. Under the various leasing options that we have looked at, you can use it for icebreaking, but you can't necessarily use it for law enforcement and defense-related operations, where you need a sovereign military vessel that belongs to the United States.

So my recommendation, my strongest recommendation to you, is we proceed in getting a Coast Guard-owned icebreaker or two as we go forward, and put our efforts into that. And then who knows what happens in the future. Maybe there are some times where you need to surge for a couple years, because of conditions, and a lease might make sense for that.

But my strongest recommendation is staying with the Coast Guard-owned.

Senator LANDRIEU. Thank you. I think this has been a very, very good first panel. And, Admiral, thank you for your testimony.

Admiral PAPP. Thank you, Chairman, for having this hearing.

Senator MURKOWSKI. Chairman.

Senator LANDRIEU. Yes, go ahead.

FISHERIES ENFORCEMENT

Senator MURKOWSKI. If I might just ask one more brief question, because we focused a lot about the activities up north, but I think we also recognize that one of the very significant responsibilities of the Coast Guard in this region is fisheries enforcement.

And unfortunately, we have seen an increase in the illegal, unreported, the high seas driftnet fisheries. Could you just comment, briefly, Admiral, on what we're seeing out there? Is it an increased volume of traffic, a level of sophistication that we haven't seen before? And how are we doing in combating this illegal activity?

Admiral PAPP. Yes, ma'am.

And I would like to have my staff or myself, when both of you get back to Washington, and give you a classified briefing on what is going on there.

But I would call this fishing piracy that is going on. Right now, we are prosecuting a case—the WHEC *Rush*, as I mentioned, is almost all the way to Japan but still under Admiral Ostebo's tactical control.

And we have been working across the Government. We have something called the Maritime Operational Threat Response Organization, which works across State and Justice and other departments. And we have come to a national objective of seizing what amounts to, we found out now, a stateless vessel that has 40 tons of fish.

They put 8 miles of net out there and collect everything that flows through it, killing off a lot of species, and picking up migratory stocks that perhaps would come back to Alaska waters. And they have 40 tons of fish onboard.

We have a boarding team on board right now on the cutter *Rush*, and we are working to come to either pass this off to China, perhaps, for prosecution, because there is a claim—well, there are Chinese citizens on board that are manning the ship. But it is stateless, as far as we can determine. And as a fallback, we can bring it back to the United States for prosecution as well.

Senator LANDRIEU. I hope we are filing charges not just against the man operating the ship but the buyers of these fish and tracking it down to the networks that are really funding these kinds of illegal operations. And we will commit to work on that.

I think people would be horrified at home to hear—the lower 48—about what is really going on here in these waters.

But thank you, Admiral, we appreciate it.

Admiral PAPP. Thank you, Chairman, and thank you, Senator Murkowski.

Senator LANDRIEU. And our next panel, and we're going to conduct the next panel for about 30 to 35 minutes.

As you are introduced, if you come forward? There'll be very brief introductions and the Senator may want to add some words.

Mark Meyer serves as vice chancellor for research at the University of Alaska at Fairbanks, where he oversees administration of the university's $123 million per year research enterprise that supervises the university's stand-alone initiatives. Prior to serving in this capacity, Chancellor Myers held various senior executive and scientific research in petroleum industry positions, including the State of Alaska pipeline coordinator.

Welcome, Dr. Myers.

Our next is Merrick Burden, executive director of the Marine Conservation Alliance. Mr. Burden is executive director of a group of industry harvesters, processors, and communities engaged in the North Pacific and Bering Sea seafood industry. He can probably shed some light on what we just spoke about.

Their role is to seek practical solutions to sustainable fisheries management through sound science and application of law.

And finally, Mr. Bruce Harland, vice president of Alaskan international contract service, Crowley Marine Services, a business unit responsible for the U.S. West Coast international markets. Crowley provides ship-assisted and escort services, salvage, and oil spill response equipment; contract towing services; Atlantic transportation services; et cetera, et cetera.

So, all three of these gentlemen have tremendous experience in areas that our subcommittee is exploring today.

Dr. Myers, why don't we begin with you? I think we have asked for 5 minutes of opening testimony. Then we will go through probably just one round of questioning, but go right ahead.

Try to pull the mike a little closer to you, and you may have to adjust it, or you can pull it off, like I did. I am not sure it's on. One of the staff may turn that on.

STATEMENT OF DR. MARK MYERS, VICE CHANCELLOR FOR RESEARCH, UNIVERSITY OF ALASKA—FAIRBANKS, FAIRBANKS, ALASKA

Dr. MYERS. Thank you, Chairman Landrieu, Senator Murkowski, for the opportunity to speak. But also, thank you for coming to Alaska.

You can't get a perspective on the size and scope of the State and the challenges the Coast Guard faces until you actually see it in place.

The State is vast. The Coast Guard's mission is vast. Just to give you an example, almost 30 years ago, I worked in the oil and gas industry, and we did an exploration well in the Navarin Basin. That was after working in Louisiana.

Senator LANDRIEU. You're going to have to speak a little louder. It is going to be hard, so just kind of lean into your mike.

Dr. MYERS. Is that better?

Senator LANDRIEU. That's better.

Dr. MYERS. Almost 30 years ago, when I first came up to Alaska, I worked on an oil exploration well in the Navarin Basin. And we used a much larger helicopter, a Chinook, then the H–60 here, much more capable in terms of distance.

In order to get to the well site, we had to replace almost all the seats on the helicopter with inboard fuel tanks, and we could only take a few people at a time, over 4 hours of over-ocean conditions out of Nome, the closest major port and facility with fuel and an airport.

And we didn't wear our exposure suits. To simply explain that, if you went down, the exposure suit, you would not survive long enough. There would be no rescue.

So to give you scope, that was one well almost 400 miles offshore in Alaska. That is the scale and scope of issues.

And we went off in the closest possible location that had an airport and fuel.

So the areas we're talking about are huge in scope, and the Coast Guard's mission is very, very challenging in that way.

I'm going to focus my testimony on the Arctic itself, the Arctic region, so sort of the Bering Strait into the north. And in addition to the huge responsibilities the 17th District has, the Arctic is going to be a very big challenge.

As you had mentioned, we are seeing major changes in environmental conditions. We're also seeing a significant drive toward resource development, circumpolar in the Arctic, a lot of that driven by oil and gas potential, the U.S. Geological Survey 2008 study pointed out, as you did, 13 percent of the undiscovered resources. That equates to about 90 billion barrels of oil and about 44 billion barrels of natural gas liquids. That is a huge amount of petroleum potential out there. And countries are exploring, whether it be the United States or other countries, it is happening as we speak.

At the same time, there are immense mineral deposits in the Arctic, in addition. Coal deposits, lead, zinc, iron ore, nickel in the Arctic that are being considered for development, now that we're seeing possibilities for shipping.

Ecotourism has been mentioned. That is becoming a much larger industry in the Arctic as people want to get north and see this country.

And then, finally, Arctic shipping and possibly Arctic fishing. As we see opportunities to develop resources in the Arctic, the ability of the northern sea route becomes a real possibility with ice-strengthened hulls.

So we're seeing those major pushes in the development side. At the same time, the change that is happening in the Arctic is happening very rapidly.

As a simple analog, it is really about water. Fundamentally, the Arctic is frozen. And as it warms up, it is becoming much less frozen.

Simply put, that means seasonally, much longer open water seasons. And also, the glue that holds the Arctic coast together is permafrost. Permafrost is really just ice within the soil. As we lose that, as it changes, the coast erodes much more quickly.

As we lose sea ice, there are huge environmental feedback mechanisms that take place that increase warming. Again, ice reflects really well, reflects sunlight. The open ocean absorbs sunlight. Ocean acidification and other factors are occurring.

So we're seeing in the Arctic in major transition, both in the case of the resources that are available, but also in the environmental conditions.

So research to understand those conditions is extremely important. And the Coast Guard has a significant role in that through the *Healy*.

The *Healy* is a unique U.S. asset. It can carry about 35 scientists. It has tremendous laboratory capacity. It is, basically, our major Arctic research vessel that can work in the areas to the north, where we have ice conditions still.

Again, the ice changes we're seeing both on the fringes of the summer months—September is the least amount of sea ice—but also as you move further north, it is still very much ice.

The *Healy* can break about 4.5 feet of ice. It can work in conditions that no other surface vessel that the U.S. Government operates can. It has been doing that work very well.

For instance, in determining the basic shape and conditions of the Arctic basin and any potential claim that the United States might make in the future under the Law of the Sea, the *Healy*, along with the St. Laurent, the Canadian service, has been for multiple years working to acquire the basic seismic and bathymetric data sets so we understand both the Canadian and Russian claims, and a U.S. claim or protest should we decide to go that route.

So it's a critical vessel. That vessel is also the only working icebreaker we have. So if it gets called off for other search-and-rescue areas, the scientific missions must quit.

So it is a very challenging condition to have only a single icebreaker. The *Polar Star* will become critical, to see it operational. Also, a medium icebreaker can only really work in single season

ice. It can't do the heavy lifting that a heavy icebreaker can, in the sense of dealing with more severe ice conditions.

But again, the *Healy* becomes a critical asset. The Coast Guard cooperation with the National Science Foundation has led to fundamental research changes and understandings in the Arctic. And if we lose that capacity, or if we can't maximize that capacity, the country will lose a significant amount of research capacity.

Second, the opportunity to do transformational approaches is available. If you think about these helicopters, there are very few of them. The H–60 is land-based only. That is really the only seaborne helicopter that can be carried by cutter. They can't cover much of the ground.

We need to start using more unmanned systems, unmanned aerial vehicles (UAVs), unmanned submarines, submarine gliders, and remote sensing systems, coupled with the fundamental traditional way that we do Arctic domain awareness.

The university is working in strong partnership with the Department of Homeland Security through various funded research projects, one of which is a cooperative between the Department of Homeland Security and the universities of Alaska and Hawaii working jointly.

One of the products of that research is an Arctic domain awareness system that uses very small portable radars with their own small portable supply mostly powered by wind and solar, but a little bit of backup diesel. Those radars can sense sea ice.

Along with UAVs, along with satellites, we can do a much better job of detecting ice along the coast. We can also use it, potentially, to locate vessels. The power source and the communication system then can be used to relay critical information for other sensors.

So the ability to put coastal, small-scale, portable systems out there, combined with other assets, really revolutionizes our ability to see and understand the conditions that are occurring in the Arctic, giving a better picture.

It is crucial that we build systems that can work under ice. Again, if you look fundamentally, much of the year, the coast is still covered. We need to understand what is under the ice. We need to understand, should there be a catastrophic oil spill, to be able to model and actually map the movement of that oil under ice, also to understand the ecological changes that are occurring under the ice as well.

So there's a lot of new technology and approaches that universities are in the forefront, that the partnership with Homeland Security are really important.

PREPARED STATEMENT

At the same time, it is very important the Coast Guard, in my opinion, start adapting and using more of these approaches. Being able to launch small, UAVs off their ships, for example, would be a huge leveraging system.

[The statement follows:]

PREPARED STATEMENT OF DR. MARK MYERS

Thank you, Chairwoman Mary Landrieu, Ranking Member Dan Coats, and distinguished members of the subcommittee. It is a pleasure to appear before you today

to discuss the resources necessary to respond to changes in the Arctic, and the United States Coast Guard's many responsibilities in Alaska.

The U.S. Coast Guard is actively engaged in missions throughout maritime Alaska. For this testimony I will focus on the Arctic and the great challenges that the Coast Guard and the Nation will face in light of the environmental and human use changes we are observing. I will stress the importance of research both enabled and conducted with the support of the Coast Guard and needed by the Coast Guard to develop effective mission capabilities in this challenging environment.

MAJOR DRIVERS OF CHANGE IN THE ARCTIC

Two major drivers of change in the Arctic are: (1) a warming climate with its corresponding ecosystem changes; and (2) an increased demand for the Arctic's abundant natural resources. A major result of a warming Arctic has been a significant reduction in seasonal ice cover along with a decrease in multi-season ice in the central Arctic Ocean. This has created more seasonal near shore open water and a longer potential shipping season in areas of the Arctic. These circumstances have contributed to increased interest in resource exploration and development along with more ship based tourism and seasonal marine transport. The increased human activity in the Arctic is coupled with challenges faced by Arctic communities due to increased coastal erosion, storm surge and permafrost thawing and the associated challenges to infrastructure along with concern about maintaining the quality of and access to subsistence food sources in a changing environment.

These changes in the Arctic place additional burdens on the Coast Guard to focus more efforts further North in the challenging environments of the Arctic in key missions including marine environmental protection, search and rescue, protecting marine living resources, maintaining maritime domain awareness and presence and managing ice operations. The U.S. Arctic is a challenging environment in which to perform these missions because it has little built infrastructure (for example no deep water ports), severe operating conditions, and a rapid ecosystem change.

NEEDED INVESTMENTS IN THE ARCTIC

A significant investment in research will be necessary for the Coast Guard to understand the changing conditions successfully and their effects on its key missions and incorporate new approaches and technologies into arctic operations. This will include robust capacity to support and understand and integrate the results of wide ranging Arctic research fields including physical oceanography, atmospheric and weather science, ecosystem analysis and social science. The Interagency Arctic Research Policy Committee (IARPC) Research Plan for 2013–2017 highlights many of the needed study directions including sea ice and marine ecosystem studies, terrestrial ecosystem studies, atmospheric studies of surface heat, energy and mass balances, observing systems, regional climate models, adaptation tools for sustaining communities and human health studies.

With respect to observing systems, new approaches to integrated Arctic monitoring are necessary some of which can be provided by unmanned systems including aircraft (from hand launched to Global Hawk) ocean surface and underwater vehicles (submarine gliders and powered) which can be used in conjunction with aircraft, ship, buoys, and cabled ocean observing systems, and satellite systems. In addition, small portable and remotely powered land based systems such as small high frequency coastal radar can greatly assist in tracking ships, measuring surface currents and tracking sea ice.

Key to successful research and operations in the Arctic are ice breakers and long endurance aircraft. The *Healy* is the only currently operational U.S. ice breaker in the Arctic and a crucial and unique research platform for working in and moving through ice up to 4.5 feet thick. With its 4,200 square feet of lab space, sensor systems and winches the *Healy* can accommodate 35 scientists (up to 50 in surge capacity). The *Healy* is the only U.S. Government surface vessel capable of performing broad based scientific research in the northern and central regions of the Arctic Ocean. In recent years the *Healy* has worked collaboratively with the Canadian ice breaker *St-Laurent* to gather key bathymetric and seismic data critical to understanding the basis for future claims for an extended continental shelf that may be filed under UNCLOS by either Canada or Russia. In October 2012 the United States will launch the National Science Foundation funded, University of Alaska Fairbanks operated global class ice-capable research vessel R/V *Sikuliaq*. With its Arctic specific design the *Sikuliaq* will be able to break through up to 1 meter of ice and perform similar research missions. However, the *Sikuliaq* will not be able to operate as far north or for the length of season that the *Healy* can. The *Sikuliaq* is best seen as a complimentary vessel to the *Healy*. Until the *Polar Star* is refurbished

the *Healy* will be the only operational U.S. polar ice breaker. That means that in addition to its scientific mission the *Healy* must perform all the other key northern missions including such things as rescue and emergency escort, marine environmental protection and maintaining maritime domain awareness and protection. Even with the refurbishment of the *Polar Star* new ice breaking capacity will be necessary for the United States to maintain a credible long term Arctic presence and conduct effective research in ice covered waters.

GOVERNMENT COORDINATION WITH RESEARCH UNIVERSITIES

It is important that the Coast Guard and Department of Homeland Security (DHS) continue to be an active partner with Federal and State research agencies and universities which conduct arctic research. These include but are not limited to partnerships with National Science Foundation, National Oceanic and Atmospheric Administration, United States Geological Service, National Aeronautics and Space Administration, Department of Defense, the Environmental Protection Agency, the State of Alaska, the United States Antarctic Resource Center, and U.S. universities including Alaska, New Hampshire, Hawaii and others. One example of a successful university/DHS collaboration with the University of Hawaii/University of Alaska Fairbanks DHS funded Center for Island, Maritime and Extreme Environment Security (CIMES). The CIMES Arctic Maritime Domain Awareness component will deliver to the Coast Guard in the summer of 2013 a demonstration of integrated satellite, UAV, and high frequency radar for collecting and analyzing "ice-water interface" data in near real-time for navigation assistance off the coast of Barrow. The purpose of the demonstration is to validate that the technologies and models created as a result of CIMES funding from DHS can directly enhance Coast Guard operations by improving the understanding between sea ice and open water, in near real-time, for: (1) search and rescue, (2) environmental protection, and (3) border security missions, in the Arctic.

In summary, the Coast Guard will play an increasingly important role in the Arctic in the upcoming decades. Increased investment will be needed in many areas of research and technology necessary to understand and respond to increased maritime activity and the changing environment. Increased investment will be needed in building and maintaining a capable ice breaker fleet, forward operating infrastructure and capacities, strong agency and university partnerships, and new technological enablers including unmanned systems and advanced sensors.

Senator LANDRIEU. Thank you very much.

I am very happy that you mentioned that, because, as the Senator knows, I plussed-up the research budget of Homeland Security by $200 million. I feel very strongly in investing in research dollars.

And, Senator, we can work to direct a portion of that, I think, with the support of the department, to more of this kind of research for the Arctic, because we have to operate more smartly. And I think the new technology with this unmanned technology could give us more eyes in the sky, using our satellites, et cetera, a smarter way for the Coast Guard to catch these perpetrators, like this one that put an 8-mile net across the ocean, as well as using it for others.

So, thank you.

Mr. Burden.

STATEMENT OF MERRICK BURDEN, EXECUTIVE DIRECTOR, MARINE CONSERVATION ALLIANCE, SEATTLE, WASHINGTON

Mr. BURDEN. Before I start, I would just like to express my thanks. It is a great honor to be here this morning. I appreciate the invitation. So I will just go ahead and get started.

I would like to thank the chair and ranking member of the subcommittee for holding this hearing today. I would also like to thank Senator Murkowski for her ongoing commitment to the Coast Guard, the Alaska fishing industry, and fishing-dependent coastal communities.

For the record, my name is Merrick Burden, and I am the executive director of the Marine Conservation Alliance (MCA).

MCA is a broad-based coalition of seafood harvesters, processors, fishing-dependent coastal communities, Western Alaska community development port organizations involved in the Federal ground fish and shellfish fisheries off of Alaska.

MCA was formed to promote the sustainable use of North Pacific marine resources by present and future generations. MCA supports research and public education regarding the fishery resources of the North Pacific and seeks practical solutions to resource conservation issues.

The fishing industry off Alaska generates more than $3 billion at the wholesale level and supports more than 80,000 jobs directly and indirectly on an annual basis. It is the largest private-sector employer in the State of Alaska, and it employs individuals from all over the United States who come to Alaska to work as fishermen, seafood processors, or in support industries.

In many areas of coastal Alaska, the seafood industry is the dominant source of employment, and is the economic driver for those communities.

The fisheries of the North Pacific have often been called one of the success stories of fishery management. The volume of fishery resources extracted from the North Pacific and Bering Sea number in the millions of tons annually, and many fisheries in the region have been certified as sustainable by third-party verification processes.

This multibillion-dollar economic engine relies upon sustainable management practices, which means domestic regulations and international treaties must be enforced.

These fisheries take place in some of the most remote areas of the United States and in some of the most hazardous maritime conditions found on Earth. Sea ice and gale force winds are commonplace in the region and frequently provide hardship for those that live and work in the area.

In the fall of 2011, for instance, the city of Nome, Alaska, required that an icebreaker assist in getting a fuel tanker to the city, in order for residents there to have heat and energy for the long winter.

During the snow crab season of this past winter, the crab industry was forced to hire a tug for 3 months to regularly clear ice from the St. Paul Harbor so that crab vessels could safely access the harbor to deliver their catch.

In addition to these specific examples, each year fishermen injured at sea are airlifted from their vessels and transported via helicopter to Kodiak or Anchorage, more than 100 miles away.

Despite the remoteness of this region, substantial amounts of commerce make their way between North America and Asia via the North Pacific great circle route. Ships traveling between the U.S. west coast thread their way through the Aleutian Islands, typically passing through Unimak Pass, which lies to the east of Dutch Harbor.

Occasionally, these ships find themselves in distress and in need of assistance. At times, these ships have drifted ashore and broken

apart, spilling fuel oil or their cargo into the waters of the North Pacific.

Only a handful of years ago, this very thing occurred and threatened to impact the fishing industry due to concerns from consumers over the possibility of contaminated seafood. The fishing industry responded by conducting water quality assessments and fish contamination tests to alleviate these concerns.

While these assessments cost a great deal, the seafood industry in Alaska depends on consumer confidence in their products. Although there have not been any apparent impacts on the seafood industry from these events yet, increased shipping traffic increases a risk that there may be impacts in the future.

Madam Chair, the Coast Guard plays an important part role in these waters, which matter a great deal to the North Pacific seafood industry.

The seafood industry has long viewed the Coast Guard as not only a welcome presence but a necessary partner. The Coast Guard's task in this region is enormous. At times, the Coast Guard is the lifeline of the industry as they aid fishermen in distress. They play the part of incident management and response.

At other times, they enforce domestic regulation and international treaties or agreements, such as the observed Russia-United States maritime boundary.

These activities often take place in severe conditions where gale force winds, heavy seas, sea ice, and freezing spray are present that not only affect the ability of fishing vessels to harvest fish from these waters but also affect the ability of the Coast Guard to perform rescue operations, or to respond to other incidents.

In these instances, mere minutes can mean the difference between a successful response and an unsuccessful one.

This means that reliable, up-to-date equipment that can stand up to these conditions is a vital component of the Coast Guard's mission in Alaska and to the people that rely upon the Coast Guard for their well-being.

The fishing industry is inherently at the whim of the natural environment. As the natural environment changes, so must the seafood industry.

One place that is experiencing relatively dramatic change is the Arctic. Information indicates that crab, salmon, and some species of ground fish may be extending their range northward from the Bering Sea and spilling into the Arctic. If commercially valuable fish and shellfish become established in sufficient numbers, it is possible that fisheries will look to expand northward as well.

Recently, however, the North Pacific Fishery Management Council voted to close these waters to fishing for many types of species until more is known regarding the ability of this environment to support commercial fishing activities. This means that for the foreseeable future, we do not expect to see much fishing in this region.

Over the longer term, it appears possible for fisheries to develop in the Arctic. But due to conditions that are present in this area, it is difficult for us to imagine fishing activity occurring at the same scale which it does in the Bering Sea.

In any event, when you U.S.-based commercial fishing activity takes place in the Arctic, if it does at all, it is almost certainly

many years away and, therefore, the needs of Coast Guard as it relates to domestic fishing activity in the Arctic appears limited for some time.

However, other user groups are eyeing the Arctic, such as the oil and gas industry. These developments will require additional resources, which further expand the Coast Guard's mission off Alaska.

It recently came to our attention that the Coast Guard's 17th District is facing a 19-percent reduction in the number of cutter days that can be used for fisheries law enforcement. Our understanding is that this reduction is being driven by the retirement of older Coast Guard assets, which have not been replaced, and the reprioritization of remaining assets to operations in the Arctic.

The seafood industry is concerned that this reduction will impact safety, enforcement, and management of North Pacific fisheries.

We would ask that the Congress provided funding necessary to maintain a fisheries-based Coast Guard presence that is more similar to recent years, while also providing funding that will be necessary for the Coast Guard's expanding role in the Arctic.

PREPARED STATEMENT

Madam Chair, I want to thank you and members of this subcommittee for providing this opportunity to testify to you today. I would be happy to answer any questions.

[The statement follows:]

PREPARED STATEMENT OF MERRICK BURDEN

I would like to thank the Chair and Ranking member of the subcommittee for holding this hearing today. I would also like to thank Senator Murkowski for her ongoing commitment to the United States Coast Guard, the Alaska fishing industry, and fishing dependent coastal communities. For the record, my name is Merrick Burden, and I am the Executive Director of the Marine Conservation Alliance (MCA). MCA is a broad based coalition of seafood harvesters, processors, fishing dependent coastal communities, and western Alaska Community Development Quota (CDQ) organizations involved in the Federal groundfish and shellfish fisheries off Alaska. MCA was formed to promote the sustainable use of North Pacific marine resources by present and future generations. MCA supports research and public education regarding the fishery resources of the North Pacific, and seeks practical solutions to resource conservation issues.

The fishing industry off Alaska generates over $3 billion at the wholesale level and supports over 80,000 jobs directly and indirectly on an annual basis. It is the largest private sector employer in the State of Alaska, and it employs individuals from all over the United States who come to Alaska to work as fishermen, seafood processors, or in support industries. In many areas of coastal Alaska the seafood industry is the dominant source of employment and is the economic driver for those communities.

The fisheries of the North Pacific have often been called one of the success stories of fishery management. The volume of fishery resources extracted from the North Pacific and Bering Sea number in the millions of tons annually and many fisheries in the region have been certified as sustainable by third-party verification processes. This multi-billion dollar economic engine relies upon sustainable management practices, which means domestic regulations and international treaties must be enforced.

These fisheries take place in some of the most remote areas of the United States and in some of the most hazardous maritime conditions found on Earth. Sea ice and gale force winds are commonplace in the region and frequently provide hardship to those that live and work in the area. In the fall of 2011 for instance, the city of Nome, Alaska, required that an ice breaker assist in getting a fuel tanker to the city in order for residents there to have heat and energy for the long winter. During the snow crab season of this past winter, the crab industry was forced to hire a tug for 3 months to regularly clear ice from the St. Paul harbor so that crab vessels

could safely access the harbor to deliver their catch. In addition to these specific examples, each year fishermen injured at sea are airlifted from their vessels and transported via helicopter to Kodiak or Anchorage, several hundred miles away.

Despite the remoteness of this region, substantial amounts of commerce make their way between North America and Asia via the North Pacific Great Circle route. Ships traveling between the U.S. west coast thread their way through the Aleutian Islands, typically passing through Unimak pass which lies to the east of Dutch Harbor. Occasionally these ships find themselves in distress and in need of assistance. At times these ships have drifted ashore and broken apart, spilling fuel oil or their cargo into the waters of the North Pacific. Only a handful of years ago this very thing occurred and threatened to impact the fishing industry due to concerns from consumers over the possibility of contaminated seafood. The fishing industry responded by conducting water quality assessments and fish contamination tests to alleviate these concerns. While these assessments cost a great deal, the seafood industry in Alaska depends on consumer confidence in their products. Although there have not been any apparent impacts to the seafood industry from these events yet, increased shipping traffic increases the risk that there may be impacts in the future.

Madame Chair, the United States Coast Guard plays an important role in these waters which matter a great deal to the North Pacific seafood industry. The seafood industry has long viewed the United States Coast Guard as not only a welcome presence, but a necessary partner. The Coast Guard's task in this region is enormous. At times the Coast Guard is the lifeline of the industry as they aid fishermen in distress; they play the part of incident management and response; at other times they enforce domestic regulation and international treaties or agreements, such as the observed Russian/U.S. maritime boundary. These activities often take place in severe conditions where gale force winds, heavy seas, sea ice, and freezing spray are present that not only affect the ability of fishing vessels to harvest fish from these waters, but also affect the ability of the Coast Guard to perform rescue operations or to respond to other incidents. In these instances, mere minutes can mean the difference between a successful response and an unsuccessful one. This means that reliable, up to date equipment that can stand up to these conditions is a vital component of the Coast Guard's mission in Alaska, and to the people that rely upon the Coast Guard for their well-being.

The seafood industry is inherently at the whim of the natural environment. As the natural environment changes, so must the seafood industry. One place that is experiencing relatively dramatic change is the Arctic. Information indicates that crab, salmon, and some species of groundfish may be extending their range northward from the Bering Sea and spilling into the Arctic. If commercially-valuable fish and shellfish become established in sufficient numbers, it is possible that fisheries will look to expand northward as well. Recently, however, the North Pacific Fishery Management Council voted to close these waters to fishing for many types of species until more is known regarding the ability of this environment to support commercial fishing activities. This means that for the foreseeable future we do not expect to see much fishing in this region. Over the longer term it appears possible for fisheries to develop in the Arctic, but due to the conditions which are present in this area it is difficult for us to imagine fishing activity occurring at the same scale which it does in the Bering Sea. In any event, when U.S.-based commercial fishing activity takes place in the Arctic, if it does at all, is almost certainly many years away and therefore the needs of the Coast Guard as it relates to domestic fishing activity in the Arctic appears to be limited for some time. However, other user groups are eyeing the Arctic, such as the oil and gas industry. These developments will require additional resources which will further expand the Coast Guard's mission off Alaska.

It recently came to our attention that the Coast Guard 17th District is facing a 19-percent reduction in the number of cutter days that can be used for fisheries law enforcement. Our understanding is that this reduction is being driven by the retirement of older Coast Guard assets which have not been replaced, and the reprioritization of remaining assets to operations in the Arctic. The seafood industry is concerned that this reduction will impact safety, enforcement, and management of North Pacific fisheries. We would ask that Congress provide funding necessary to maintain a fisheries-based Coast Guard presence that is more similar to recent years while also providing funding that will be necessary for the Coast Guard's expanding role in the Arctic.

Madame Chair, I want to thank you and members of the Committee for providing this opportunity to testify before you today. I will be happy to answer any questions you may have.

Senator LANDRIEU. Thank you very much.

Mr. Harland.

STATEMENT OF BRUCE HARLAND, VICE PRESIDENT, COMMERCIAL SERVICES, CROWLEY MARINE, OAKLAND, CALIFORNIA

Mr. HARLAND. Good morning, and thank you for allowing me to speak with you this morning.

My name is Bruce Harland, and I am the vice president of contract services for Crowley Marine Services, a company that has been operating in the Alaskan Arctic continuously since 1957.

I'm also here as a representative of the American Waterway Operators (AWO) and its member companies that supply valuable transportation services to Alaskans.

In preparation for the meeting, the members first agreed on our definition of the Alaskan Arctic as the region west and the north of the Unimak Pass.

This area is characterized by extreme weather events, changing and unpredictable ice conditions from year to year, draft limitations, and above all, a remote region where assistance can be many hours or even days away.

AWO-member companies have worked within these limitations to develop a safe, efficient, and cost-effective system to provide transportation and fuel delivery services to villages and businesses in the region. The tools we have developed include fleets to deliver supplies in shallow waters; operating material such as float hoses to deliver to island tanks; spill response plans; landing craft used where no docks exist; procedures to be followed that capture best practices; and above all, experienced, professional mariners who have an intimate knowledge of the region.

Over the last 5 years, we have witnessed a dramatic change in the Arctic with reduced but still unpredictable ice conditions, increased interest in resource development in the outer continental shelf, adventure tourism, and talk of new polar shipping routes.

The Coast Guard is now developing strategies to respond to this change and AWO-member companies would propose these areas of focus:

Accurate charting and hydrographic information. Most areas in the region have little or no up-to-date charts. Increased use of electronic charting and aids to navigation embedded into electronic charts would be a significant improvement. The navigable rivers and bays are especially critical for safe navigation.

Increased Automatic Identification System coverage in the area to identify other vessels for security, collision avoidance, and potential assistance.

Vessel traffic system for Unimak Pass and the Bering Strait to improve safe passage.

More accurate weather and tide information for the region.

Improved search-and-rescue capabilities and incident response in the region. This could be with a combination of new assets and facilities in the region.

Improved icebreaking capabilities. This would again provide search-and-rescue capability, security for the region, and could potentially extend the marine season by opening up the ice for shipping during the shoulder seasons.

A deepwater Arctic port. This is currently being investigated by the State and the Army Corps, and could be utilized as a forward deployment point for the Coast Guard.

PREPARED STATEMENT

In conclusion, we would like to leave you with a final thought. AWO members have been safely operating in the region for many years and, in conjunction with both the Coast Guard and the State of Alaska Department of Environmental Conservation, have developed effective systems for the safe transportation of cargo and bulk fuels vital to the health and development of the local cities and villages in Alaska. Significant regulatory changes that would alter this transportation system could have a very large impact on the fragile economic health of the region already suffering from the high cost of basic necessities, such as heating fuel.

Thank you.

[The statement follows:]

PREPARED STATEMENT OF BRUCE HARLAND

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THE ARCTIC REGION IN ALASKA

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STRATEGIES TO ADDRESS CHANGING CLIMATIC CONDITIONS

Over the last 5 years we have witnessed a dramatic change in the arctic with reduced but still unpredictable ice conditions, increased interest in resource development in the Outer Continental Shelf (OCS), adventure tourism and talk of new polar shipping routes. The USCG is now developing strategies to respond to this change and the AWO-member companies would propose these areas of focus.

—Accurate charting and hydrographic information. Most areas in the region have no up to date charts. Increased use of electronic charting and aids to navigation embedded into electronic charts would be a significant improvement. The navigable rivers and bays are especially critical for safe navigation.
—Increased AIS coverage in the area to identify other vessels for security, collision avoidance, and potential assistance.
—Vessel traffic system for Unimak Pass and Bering Straits to improve safe passage.
—More accurate weather and tide information for the region.
—Improved Search and Rescue capabilities and incident response in the region. This could be with a combination of new assets and facilities in the region.
—Improved ice-breaking capabilities. This would again provide Search and Rescue capabilities, security for the region and could potentially extend the marine season by opening up the ice for shipping during the shoulder seasons.
—Deepwater Arctic Port. This is currently being investigated by the State and the Army Corps and could be utilized as a forward deployment point for the USCG.

CONCLUSION

We would like to leave you with a final thought; AWO members have been safely operating in the region for many years and in conjunction with both the USCG and State of Alaska Department of Environmental Conservation have developed effective systems for the safe transportation of cargo and bulk fuels vital to the health and development of the local cities and villages in Alaska. Significant regulatory changes that would alter this transportation system could have a devastating impact on the fragile economic health of the region already suffering from the high cost of basic necessities such as heating fuel.

Senator LANDRIEU. Thank you.

We're going to start with Senator Murkowski's questioning.

Senator MURKOWSKI. Thank you, each of you, for your contribution here. I think as we think about the role of the Coast Guard, it is easy to think about the icebreaking capacity, the helos that we need, the response cutters. But I think the recognition is that there is an expanding role in so many different sectors.

And, Bruce, you mentioned what we are seeing with the increased shipping traffic. As there is more water, you are going to see more ships. As there are opportunities to decrease your costs by moving through the northern waterways routes or up around the Northwest Passage, we are seeing changes. And again, the Coast Guard's responsibility just becomes that much more enhanced.

So I would like to focus just real quickly in terms of what we're seeing with the volume of commercial shipping and traffic.

I am going to show the chairman here a picture that shows the volume of ships. These are the numbers of ships that move through Unimak Pass.

Now, Unimak Pass is here on the Aleutian Islands. And when you're transiting from the lower 48 from Seattle, you either come around the Aleutian chain, which is all the way up here, or you cut through Unimak. So you have a choke point here at Unimak. The distance here is about 12 miles, I understand.

You also have a choke point here in the Bering Sea, where it is about 50 miles across.

But right now, we don't have any rules of the road, so to speak. And you have a level of shipping traffic that is heading north.

Mr. Harland, can you speak to what you are seeing, how you view the significance of waterway management, I guess for lack of better terminology, as we're seeing the volume of ship traffic in and around our Arctic and northern waters?

Mr. HARLAND. Waterway traffic is one of the most critical issues facing the State of Alaska, and we have seen that transportation of oil and refined products, those incidents have dropped dramatically. And where we see the difficulty is in the foreign cargo ships, which are using Unimak Pass. It's innocent passage. They are on their way from an international voyage to a U.S. port or a Canadian port.

And if they have engine trouble, if they have steering gear go out, then they are at the whim of the weather. And the *Selendang Ayu* is an incident that was a devastating impact to the city of Unalaska and the region, which spilled oil and a whole cargo of soybeans.

And part of that funding from that incident is doing the Aleutian Islands risk assessment study. And they are looking at how we can

make Unimak Pass and the Bering Sea routes safer, and what kind of vessel traffic system can be put in place that still abides by international law, that you can't impede innocent passage, but allows some safeguards and some regulation of the traffic.

We're seeing 70 or so ships a year ago that go to Red Dog Mine and come back down through the straits. As the Northwest Passage and the northern sea route become more popular, especially in the marine season, the 120 days they can operate, you're going to see continued traffic increases through there.

I suspect that it will be a slow buildup, but right now, Unimak Pass is the single largest transit point in the State of Alaska and the most risk for an incident.

Senator MURKOWSKI. It is appropriate that we note it is not only the commercial shipping traffic.

We have cruise ships, Madam Chairman, that are now going through the Northwest Passage there.

You mentioned the ore. We have the minerals coming out of Red Dog. It is a level of ship activity that is truly unprecedented.

Let me ask this question to you, Mr. Burden. And in my opening comments I noted that District 17 is facing a 19-percent reduction in the availability of cutter days for fisheries law enforcement. And you spoke to not only the role that Coast Guard plays in terms of search and rescue, I think it is important to note for the record that, last year, District 17 responded to 586 search-and-rescue cases. They saved 146 lives, and they assisted 712 mariners.

I think our fishermen know and respect the role of the Coast Guard here, but it speaks to the significance of the role of the Coast Guard within the fisheries industry.

So if the Coast Guard is seeing a reduction, will see a reduction in the number of days they are actually out there on the water, whether it is for fisheries law enforcement, or whether it is for search-and-rescue cases, what does that mean to you in the industry?

Mr. BURDEN. Thank you, Senator Murkowski.

It is very difficult to stress the significance of those statistics that you just cited. They are not only significant, they are also heroic, in many ways.

As you know, the environment of the Bering Sea can be quite treacherous. And the expanse of the Bering Sea is immense.

When it comes to the perspective of the seafood industry, we are operating in some very hazardous environments. And it often comes down to a matter of minutes in response time. And those minutes mean the difference between life and death, between a successful response and an unsuccessful one.

And so, from the seafood industry's perspective, we believe there is a certain level, a minimum amount of resources that are necessary to adequately patrol not only for enforcement but also to respond to safety incidents as they occur, and not only a certain quantity of resources, but also a certain quality of resources.

As you know, and as we have been speaking about here, routinely, is the hazardous conditions. And I think it would be a real tragedy to have an incident begin to occur and have a delay in response time due to the inability to start up something, for instance.

So we really are concerned about the level of response capability and also the quality of that response capability.

Senator MURKOWSKI. And, Dr. Myers, I appreciate also your discussion about the role that UAVs can play. I think it is significant that when *Healy* was escorting the *Renda* north, you're looking to find that path of least resistance through the ice. And we have some pretty smart folks out there that I think realized toward the end that one of the better, more effective ways to find those leads, those breaks in the ice, was through the use of UAVs that they were able to launch and run out there. And it made the passage doable.

I think we appreciate that we can do so much more. As Senator Landrieu has mentioned, we can utilize these for fisheries enforcement, as you're out over incredible open areas where to have manned aircraft and a helicopter out there, it's tough. So how we can utilize that more I think is going to be critically important to us.

You also mentioned the mapping. I think it is important to acknowledge that, as we speak, the National Oceanic and Atmospheric Administration (NOAA) is out there, gathering additional coastal topography data.

Madam Chairman, they are essentially mapping an area that has not been mapped since Captain Cook was sailing these shores in the 1800s. Now, if you're a navigator, you're a mariner out there, I think you'd like to know that your data is just a little bit more up to date.

But, Dr. Myers, can you give me any other examples where the University of Alaska is cooperating, whether it is with what NOAA and Fairweather are doing, whether it is your research with the UAVs, how are you partnering with the Coast Guard to help with the expanding role in the Arctic?

Dr. MYERS. Thank you, Senator Murkowski.

First of all, I would like to really say how pleased the university is with the support we have been getting from the Coast Guard. Admiral Ostebo has been up to the university many times. We have had great conversations on emerging technological approaches, both how we can get support from the Coast Guard but also how the Coast Guard might employ some of the new systems and ideas coming online.

So it has been a very, very constructive dialogue. And as you have pointed out, and other panelists have pointed out, the Arctic has really some unique characteristics, not the least of, it is very dark and very cold for much of the year. And traditional observational systems that might work in the gulf don't work so well in the Arctic for those reasons. We lack support infrastructure.

So as we look at those concepts, again, any time we combine and merge sensor technologies together, we have a better picture of the Arctic.

You mentioned the UAVs, in the example. UAVs can be used with all sorts of other instruments, not just optical cameras. They have 3-D presence. They can loiter longer than aircraft can. They don't risk a pilot. You can afford to lose them if you have to.

So they are a key technology, but they are not unique. Better integration of the satellite technologies that are out there, new technologies like hyperspectral being used.

I will just give you an example. When you have oil in ice, you get a very different spectral signature. You have a very hard time telling pond water from oil, just because of the characteristics. Now take that into the darkness.

So you can see, you have to use different sensors. You have to use a different set of mixtures. We have to understand those systems. We need not only to do the research, but we then need to operationally integrate those in.

So, there is one example, better fusion and approaches of the technology.

One area we are very excited about is the National Science Foundation is funding a new oceanographic research vessel specifically designed to work in Arctic waters, the *Sikuliaq*, which will launch in October.

Now, it is capable of breaking about a meter of ice. Again, not nearly as capable as a heavy or medium icebreaker, but can work on the fringes. It has very good scientific capacity. So we see great opportunities for collaboration between the *Sikuliaq* and the *Healy*, for example, real opportunities.

You mentioned the mapping. We need much more multi-beam sonar data, to get to the bathymetric data down, particularly as we move further north, it gets pretty shallow pretty quickly.

Deepwater port studies to look at possible locations, at port clearance, and really look at what are the conditions, what are the challenges there environmentally, what is the utility.

And then finally, an area of important collaboration is the university has operated local community colleges out in the rural communities. We have strong, established relationships with these communities of trust between and collaborative education and participatory science where the communities participate. That relationship is very handy in terms of developing a core trust and core communications in the social sciences.

So as you look at resiliency of communities, that is another area. And social response to change, and to disasters, and to search and rescue, the university can play a really good role working with the Coast Guard in terms of building better relationships and more resiliency in local communities, and bidirectional information flowing from those communities to our agencies.

Senator MURKOWSKI. We appreciate what you are doing.

Thank you, Madam Chairman.

Senator LANDRIEU. Thank you.

Our hearing is just about ready to come to a close. I think the testimony has been terrific.

I just would like to end with one question to you, Dr. Myers. You oversee a research budget of about $123 million. What are the two or three areas that you're focusing your own budget on, believing that you would be setting your own priorities that might serve as some guidance to the Federal Government, in terms of our research dollars?

Dr. MYERS. A lot of those priorities have been driven by gaps of knowledge and also by my experience as director of the U.S. Geological Survey and seeing where some of those gaps are.

Senator LANDRIEU. Could you list just one, two, or three that you are directing?

Dr. MYERS. Yes. No. 1 is oil-spill response in the Arctic. We have to do it differently. As you mentioned, we don't have the capacity, and we so we need to be a lot smarter in terms of how we do it. So new and emerging technology and approaches to understand oil, to build better predictive models of where oil would flow, to be able to monitor oil better, should we get to a worst case scenario.

The university is targeting not the current exploration stage, but 10 or 15 years down, should we have, as expected—at least in my opinion, as expected—development of year-round production from the Outer Continental Shelf.

So building those capacities, filling those gaps, has been something we have invested quite significantly in.

Fundamental oceanographic research and partnerships. For instance, ocean acidification is something we are investing in, to understand, because we have so little data. And there is really very little funding coming out of Federal agencies to look at ocean acidification in the Arctic. They're looking at it elsewhere, but not so much in the Arctic. Another key area.

Understanding the social drivers and dynamics of resiliency. How do we build better communications and trust? I think the example of the Macondo spill and the community response is a key example of where we can do a better job of communications, how can we develop better approaches of bidirectional communication with communities, how do we pump out reliable information to communities that they trust?

So authoritative data coming to these communities, so they can be part of the solution and engaged early on, which has been a challenge, whether it be the *Exxon Valdez* or whether it be the Macondo spill. Those are, I think, another area, so the social science research piece is also a place where we prioritize.

Senator LANDRIEU. I think this has been excellent testimony.

And again, Senator, thank you for suggesting that we have this field hearing. It has been really eye-opening, and it is just the beginning. It is my first day, and I am looking forward to 3 more days down here on the ground.

I thank Admiral Papp. I thank the men and women of the Coast Guard Air Station hear in Kodiak for hosting this wonderful event.

I remain committed to providing the men and women of the Coast Guard the tools they need to accomplish your many missions.

ADDITIONAL COMMITTEE QUESTIONS

We will leave the record open, as is customary, for 2 weeks for other members to submit questions or for other testimony to come from the community at large, comments from the community at large.

So the subcommittee will hold the record open for 2 weeks, until close of business Monday, August 20.

[The following questions were not asked at the hearing, but were submitted for response subsequent to the hearing:]

QUESTIONS SUBMITTED TO THE U.S. COAST GUARD

QUESTIONS SUBMITTED BY SENATOR MARY L. LANDRIEU

POLAR ICEBREAKERS

Question. Currently, the Coast Guard has two heavy polar icebreakers, the *Polar Sea* and the *Polar Star*. The *Polar Star* is being refurbished and will be reactivated in 2013 for another 10 years of service, and the Coast Guard has plans to decommission the *Polar Sea*. The fiscal year 2013 budget request and the Senate bill include initial funding for a new icebreaker, but it will take 8–10 years to complete. A recent study sanctioned by the Coast Guard, named the High Latitude Study, calls for a minimum of three heavy polar icebreakers and three medium polar icebreakers.

How many new heavy polar icebreakers does the Coast Guard intend to procure and what would be the implications for future Coast Guard operations of having a polar icebreaking fleet that includes only one heavy polar icebreaker?

Answer. The Coast Guard plans to acquire one new polar icebreaker. The Coast Guard can meet known mission demands with the addition of one polar icebreaker. The number of icebreakers needed for Coast Guard operations in the future is dependent upon actual demand in the Polar regions.

Question. Please elaborate on the challenges that the Coast Guard faces in building a new icebreaker, including affordability, industrial supplier base, and schedule?

Answer. The last polar icebreaker constructed in the United States was the CGC *Healy*, delivered in 1999. *Healy* was built at Avondale shipyard. The current industry may require production line upgrades and acquisition of specialized tools, material, and equipment. The 10-year estimated schedule to complete reflects the challenges associated with the special design of the ship. As a current example, the Canadian Coast Guard is currently constructing a new heavy icebreaker. The *Diefenbaker* project was formally approved in 2008 and is projected to be delivered in 2018.

Scheduled elements include acquisition or development of a current design, time necessary to place the design and construction on contract, production engineering preparation time, vessel construction, post delivery work, and ice trials. Due to the need for special grades of steel, much thicker than normal and a unique hull form, developing a production design may prove more challenging than with conventional ships.

Question. Instead of building an icebreaker from scratch, are there parent-craft designs, perhaps one built by a foreign partner, that the Coast Guard is looking into that would speed up the acquisition timeline?

Answer. An Alternatives Analysis study will examine the potential for a parent-craft or parent-design. The U.S. Coast Guard is already working closely with the Canadian Coast Guard as they work through detailed-design efforts on their heavy icebreaker project, CCGS *John G. Diefenbaker*, which is projected to be delivered in 2018.

POLAR SEA

Question. The *Polar Sea* was placed in inactive status in November 2011 based on its current mechanical state and cost to repair, and you plan to decommission the *Polar Sea* at the end of 2012.

Given the growing need for icebreaking capabilities, why is the Coast Guard decommissioning this vessel? Does the cost to repair the *Polar Sea* outweigh the benefits of having it return to service?

Answer. Based on the estimated cost to repair and reactivate *Polar Sea* and given a maximum service life extension of 7 to 10 years, the cost to return *Polar Sea* to operations as a near-term stopgap measure exceeds the benefits a return to service would provide. Additionally, icebreakers *Healy* and *Polar Star* will meet Coast Guard's icebreaking needs for the next 7 to 10 years, thus Coast Guard is concerned only with maintaining its capability beyond this time period. Moving forward, the Coast Guard will focus resources on the acquisition of a new polar icebreaker.

Question. Is there an option for the Coast Guard to provide this vessel to a private shipyard for repair and then have the shipyard lease it back to the Coast Guard until a new icebreaker is built?

Answer. The direct transfer of *Polar Sea* to a private shipyard has not been analyzed by the Coast Guard. Leasing a vessel is a short-term strategy to close a current capability gap, as a Government-owned asset provides greater operational flexibility and long-term, reliable capacity to meet current and future requirements. The reactivation of *Polar Star* will mitigate the current capability gap. The capability

gap assumed from the High Latitude Study Mission Analysis Report is based on long-term projections through 2040; a short-term leasing option is not a cost-effective strategy to fill these gaps.

OFFSHORE PATROL CUTTERS

Question. During the next decade, the offshore patrol cutter (OPC) is scheduled to replace 270-foot and 210-foot medium endurance cutters that are nearing the end of their service lives. Compared to the national security cutter (NSC), the OPC will be smaller, less expensive, and in some respects less capable. Construction of the first OPC is expected to begin in fiscal year 2017 with delivery in fiscal year 2020.

To what extent, if any, does the Coast Guard plan to use OPCs for operations in Alaskan waters? How will the capabilities of the OPC compare to those of the NSC?

Answer. Offshore patrol cutters will be designed to perform Living Marine Resources Enforcement, Search and Rescue, and Maritime Boundary Line Enforcement while in Alaskan waters. The OPCs will be capable of operating year round in the Gulf of Alaska and Bering Sea, and per the Operational Requirements Document and Concept of Operations, may operate in areas of less than 100 percent coverage of broken plate, pancake, and sea ice ranging from 10 to 30 inches thick (though the OPC will not conduct icebreaking as a mission). The ability to operate in such ice conditions is an objective capability.

The national security cutter and offshore patrol cutter capabilities are listed in the following table:

Capability	Offshore patrol cutter (projected)	National security cutter
Seakeeping	Sea State 5 (up to 13-foot seas)—Boat and Helo ops.	Sea State 5 (up to 13-foot seas)—Boat and Helo ops
Endurance	8,500–9,500 nautical miles/45–60 days.	12,000 nautical miles/60 days
Boats and Aviation (Hangar)	2–3 boats and H–60/Vertical Unmanned Aerial Vehicle (H–65).	3 boats and H–60/Vertical Unmanned Aerial Vehicle (2 H–65)
Speed	22–25 knots	28 knots
Accommodations (maximum)	120–126	146
Command and Control	Some integration & interoperability	NATO interoperable, Integrated, Tactical datalink
Intelligence Collection	Partial	Full
Force Protection, including Chemical	Ballistic, Forward weapons, Countermeasure Washdown.	Collective Protection System and Countermeasure Washdown, Forward & Aft weapons.
Deployer	Independent, Theater Security Cooperation.	Full battle group
Underway resupply	Fueling at Sea/Provide to patrol boats	Fueling at Sea/Provide to patrol boats

Both the OPC and the NSC will have the necessary seakeeping to operate year-round in Alaskan waters, but the NSC has increased range and endurance as compared to the OPC, allowing it to remain in the patrol area for a longer period without refueling.

Question. What missions in Alaskan waters would be better performed by NSCs than OPCs?

Answer. Both the OPC and the NSC will have the necessary seakeeping to operate year-round in Alaskan waters, but the NSC has increased speed, range, and endurance as compared to the OPC, allowing it to remain in the patrol area for a longer period without refueling. The NSC also carries three boats as compared to two planned on the OPC, and has an additional helicopter hangar. These additional capabilities are critical for executing search and rescue and law enforcement operations in the harsh weather of the vast Alaskan region. Specific advantages in capability of the NSC as compared to the OPC include:

—28 knots sustained as compared to projected 22–25 knots of speed for the OPC. This capability is useful in the Alaska region where there are limited forward operating locations for Coast Guard helicopters to stage from during the peak search and rescue (SAR) season.

—A range of 12,000 nautical miles as compared to 8,500 nautical miles for the OPC. This additional range is useful for executing long-range fisheries enforcement actions, such as with the recent case in which the Coast Guard turned over a vessel suspected of illicit drift net fishing east of Japan in the North Pacific Ocean to the China Fishery Law Enforcement Command.

—60 days endurance, which is a full 2-week advantage over the OPC. This capability is useful as long as oilers to conduct at-sea replenishment are scarce in the Alaska region, and ports to resupply are limited (only Dutch Harbor and Kodiak, Alaska).

Question. Will some of the OPCs be built with ice-strengthened hulls to operate in the Arctic?

Answer. The Operational Requirements Document and Concept of Operations for the offshore patrol cutter include a brief discussion of an OPC variant that could operate in areas of less than 100 percent coverage of broken plate, pancake, and sea ice ranging from 10 to 30 inches thick (though the OPC will not conduct icebreaking as a mission). The ability to operate in such areas and conditions is an objective capability.

RESCUE 21

Question. Rescue 21 is the Coast Guard's advanced direction-finding communications system that is deployed on U.S. coastlines to better locate mariners in distress and save lives. Rescue 21 is replacing the National Distress and Response System, which has been in use since the 1970s. The Rescue 21 system began initial operations in 2005 and has since been deployed across the continental United States and Hawaii, but Alaska has been a challenge due to its rough terrain and extreme weather.

What are the Coast Guard's plans with respect to expanding Rescue 21 throughout Alaska?

Answer. The Coast Guard will recapitalize the legacy National Distress Response System (NDRS) in Alaska. Rescue 21 Alaska will differ from the system currently being deployed by General Dynamics C4 Systems (GDC4S) due to the unique geographic, operational, and environmental challenges. Starting in fiscal year 2013, the Coast Guard will recapitalize the console control systems and increase VHF FM voice capability at existing remote tower sites.

The Coast Guard will also increase system coverage in a minimum of three areas prioritized by the Pacific Area and Alaska (District 17) Commanders through their review of actual Search and Rescue case data and meetings with Alaska operational stakeholders. These new areas are Middle Cape, Peril Strait, and Fairweather Banks. New tower sites planned for these areas will require design and construction activities including completion of all logistics planning, permitting, and environmental compliance requirements.

Additionally in fiscal year 2013, the project will add Digital Selective Calling (DSC) functionality and complete network infrastructure upgrades. This will allow command centers to automatically receive GPS position data from vessels in distress with properly configured DSC radios.

ARCTIC RESEARCH

Question. Dr. Mark Myers, the vice chancellor for research at the University of Fairbanks included in his written testimony, the following: "A significant investment in research will be necessary for the Coast Guard to understand the changing conditions successfully and their effects on its key missions and incorporate new approaches and technologies into Arctic operations."

What is the Coast Guard is doing in terms of Arctic research or other projects related to challenges in Alaska?

Answer. The Coast Guard has been actively engaged in Arctic related research since 2009, when the Coast Guard began evaluating technologies and developing approaches for responding to oil spills in ice-covered waters.

To date, the Coast Guard has conducted two spill response demonstrations in the Great Lakes prior to testing in the Arctic region to evaluate the efficacy of current oil-in-ice response capabilities. These demonstrations included participants from multiple State and Federal agencies, spill response organizations, foreign governments and both Coast Guard and commercial vessels. Preliminary results indicate that heated skimmers, and emerging techniques such as oil herding, show promise and warrant further field evaluation. The Coast Guard also conducted a spill response demonstration during the Coast Guard's Arctic Shield exercise in the Arctic region in August 2012, deploying a Spilled Oil Recovery System (SORS) and a heated skimmer from a Coast Guard buoy tender. The Coast Guard also plans to conduct another Great Lakes exercise in January 2013 that will include greater in-depth testing of the SORS plus additional response technologies, to include oil detection on and under ice.

The Coast Guard is also investigating vessel capabilities for Arctic operations. The investigation included an Arctic craft demonstration that took place off Barrow,

Alaska, in August 2012. During this demonstration two amphibious vehicle technologies were evaluated for performance across unimproved shore, through open water, and transiting through or over ice flows. The goal of the effort is to identify the most appropriate craft/boat for Coast Guard operations off the North Slope of Alaska and off cutters operating in and around ice-covered waters.

The Coast Guard is also researching Arctic communication alternatives. One project is assessing the operational use of the U.S. Navy-led joint mission Tactical Microsatellite (TacSat) 4 for Arctic communications. Testing will use satellite communication systems aboard Coast Guard cutters and aircraft operating in the Chukchi and Beaufort Seas. The satellite's unique coverage pattern, a "low HEO" (highly elliptical orbit) with long dwells on theaters, may provide the Coast Guard with communications capabilities not always available in the high latitudes. The Coast Guard also plans to research High Frequency (HF) communication gaps and options in the Arctic region. The study will model current capabilities and identify potential future solutions to close gaps.

Search and Rescue (SAR) in waters that are partially or completely ice-covered is another area of current Coast Guard research. While testing has yet to occur in Alaska, realistic search performance tests approximating procedures for Coast Guard helicopters and airboats in an Arctic environment have taken place in the Great Lakes. These tests may prove to be useful in developing tactics and procedures for use in the environment in Alaska.

The Coast Guard also continues to partner with other agencies and entities conducting Arctic research. One such example is the Coast Guard's partnership with the Army Corps of Engineers' Cold Regions Research and Engineering Laboratory (CRREL). The partnership underscores anti-icing technologies, as they relate to vessels, aircraft, and shore infrastructure (e.g., antennas aboard cutters, boats, and aircraft and how this impacts vessel-to-shore communication in Arctic conditions).

Senator MURKOWSKI. And, Madam Chairman, I would just ask unanimous consent that the testimony that we have received from Lieutenant Governor Treadwell that was submitted to the subcommittee be submitted for the record. We do have that. He had asked me to do just that.

Senator LANDRIEU. Absolutely. We will, without objection.

[The statement follows:]

LETTER FROM LIEUTENANT GOVERNOR MEAD TREADWELL, STATE OF ALASKA

AUGUST 6, 2012.

Hon. MARY L. LANDRIEU,
Chairman, Subcommittee on Homeland Security,
Washington, DC.

Hon. LISA MURKOWSKI,
Member, Subcommittee on Homeland Security,
Washington, DC.

RE: Hearing on the Need for a Robust United States Coast Guard Presence in Alaska

Dear SENATOR LANDRIEU AND SENATOR MURKOWSKI: Thank you for the invitation to today's hearing. A family commitment has kept me out of town.

This letter submits comments to the Senate Subcommittee on Homeland Security Appropriations for its hearing held in Kodiak, Alaska on the need for a robust U.S. Coast Guard presence in the U.S. Arctic.

First, on behalf of the State of Alaska and its grateful people, who are part of a grateful nation, we honor the work of the United States Coast Guard and two of its fallen Kodiak Guardsmen, Petty Officer 1st Class James Hopkins, an electronics technician, and Richard Belisle, a civilian employee and retired Coast Guard chief petty officer, who were killed this spring while on duty. Alaska mourns with the families and friends of Jim and Rich. We are enduringly grateful for the work of the Coast Guard everywhere in Alaska.

The United States must prepare now to realize and act on the significant opportunities and address the changing needs in the Arctic over the coming decade. We are already seeing an increase in activity in the Arctic from oil and gas exploration, mineral development, tourism and marine transportation. This testimony addresses four specific needs that relate to the work of the USCG in America's Arctic: permitting needs for new infrastructure, planning for offshore energy exploration and de-

velopment, preparing for new global shipping patterns, and addressing gaps in science and research.

1. Alaska has extensive amounts of stranded resources. The State is hard at work planning pipelines and roads to bring these resources to world markets and to communities suffering from crippling energy prices. Nearly all these mineral and energy projects need roads and pipelines with river crossings—bridges that must be approved by the USCG. We understand the Coast Guard has just one permit administrator in Alaska. While a "general permit" approach should be considered, we urge the Congress and the Coast Guard to make sure staff resources are sufficient in this area to streamline permitting and help access to Arctic resources and communities.

2. Offshore oil and gas exploration and development is a present reality. The USCG has a leading role in ensuring marine safety and environmental protection. This year's drilling season is the beginning of what we expect could be sustained exploration and development. Land, air, and sea-based Coast Guard resources will become increasingly more necessary. If Shell, ConocoPhillips, StatOil and others are successful in their exploration, regular Coast Guard presence will be necessary for enforcement and oil spill prevention. These important duties can't be performed from a distant base such as Kodiak or even Unalaska. The Coast Guard needs to have heated hanger space, housing and other basic infrastructure in the Arctic that will allow for sustained surveillance, search and rescue, inspections and enforcement, and coordination of spill response efforts.

3. As the Arctic Ocean becomes increasingly accessible, European, Asian and North American nations are taking advantage of new shipping routes. U.S. Arctic policy calls for a shipping regime that is safe, secure, and reliable. Alaska and the Nation's coast are protected by Federal laws such as the Oil Pollution Act of 1990 and State laws. Many federally required standards are administered by the Coast Guard. For regulated vessels, these standards are some of the most stringent in the world. Standards exist for vessel design, equipment, operations, crew licensing and manning requirements, navigation safety, and spill liability. Industry can and has voluntarily exceeded these minimum standards. One of the most important changes was the phasing out of single hull tankers to double hulls. We are concerned these standards do not apply to many vessels passing through the Bering Strait and the Aleutian Islands.

(a) Unregulated vessels in the Aleutians (which the U.S. has been including in the American Arctic) and Bering Strait are a threat to that goal. To help mitigate the danger, it is imperative that the USCG implement and enforce U.S. regulations for tank and non-tank vessels within U.S. jurisdiction and aggressively pursue improvements for oil spill preparedness and response for foreign vessels in innocent passage through the International Maritime Organization. Alaska is at the intersection of the circumpolar shipping route for trade between our Pacific west coast and the Pacific Rim countries. Alaska is also the gateway to Arctic shipping through the Bering Sea, which is arguably the most productive fishery in the world. Increased presence, improved oil spill preparedness and response, and establishment of oil spill removal organizations in remote areas are essential for resource protection and safe shipping for both the circumpolar and Arctic shipping routes. Completion of the ongoing risk assessments for both the circumpolar shipping route through the Aleutians and the Arctic shipping route through the Bering Straits is essential.

(b) This past January, the world watched as the Coast Guard Cutter *Healy* escorted the Russian tanker *Renda* with a vitally important cargo of fuel for residents of Nome. We are grateful to the selfless crew of the *Healy*, who increased an already long deployment and gave up celebrating the holidays with their families to come to the rescue of iced-in Alaskans. The thick ice put the *Healy*'s medium-class ice-breaking capabilities to the test, and the lesson reaffirmed that America needs heavy, polar class icebreakers.

(c) Through the Arctic Council, the U.S. has signed an international agreement on search and rescue in the Arctic. We are responsible for the lives of those in our sector who are in danger, and we must be ready to respond.

(d) The U.S. is also participating on the Arctic Council Task Force for Arctic Marine Oil Pollution Preparedness and Response to develop an international instrument on Arctic marine oil pollution preparedness and response with the eight Arctic nations. This instrument provides a framework for international collaboration in combating incidents or threats of marine oil pollution and will be presented at the next Ministerial meeting of the Arctic Council in 2013. For this, too, we must be prepared.

(e) The Coast Guard will be on the front lines in following through on these binding agreements with our Arctic neighbors. We look forward to com-

menting upon the Committee on Marine Transportation Services' report ordered by Congress on these issues under the Arctic Marine Shipping Assessment Act of 2010.

4. Lastly, we continue to need appropriate access and platforms for science in the Arctic. Although the State of Alaska strongly supports the U.S. Senate's ratification of the UN Convention on Law of the Sea, there is some concern that ascension to it will make parts of the Arctic Ocean less accessible for some kinds of science and research. We need to support long-term monitoring networks and good land and sea mapping now, to support later U.S. claims in the Arctic.

The State of Alaska stands ready to be a partner with the United States and USCG in all these efforts. Governor Sean Parnell, in a letter to U.S. Representative Don Young dated March 15, 2012, said that while the State will not subsidize Federal missions such as icebreaking, it can be supportive in other ways, such as financing. Alaska is also already working with Federal partners on studies for Arctic ports. We are laying plans for Arctic marine shipping, and participating in Federal studies and the international agreements mentioned above. We are a long-standing partner with the Federal Government in science, and just submitted comprehensive feedback from State agencies on the Interagency Arctic Research Policy Committee draft 5-year Arctic research plan.

America must be ready for an accessible and developing Arctic. The rest of the world is not waiting for us as energy exploration, development, shipping, and tourism grow in this ocean. A Russian think-tank recently suggested the Arctic Ocean be renamed the Russian Ocean because they take this opportunity seriously. America has to be serious about the Arctic. Equipping our Coast Guard is part of rising to the challenge and benefiting from the new opportunities before us.

Sincerely,

MEAD TREADWELL,
Lieutenant Governor, State of Alaska.

CONCLUSION OF HEARING

Senator LANDRIEU. And the meeting is adjourned.

[Whereupon, at 11:38 a.m., Monday, August 6, the hearing was concluded, and the subcommittee was recessed, to reconvene subject to the call of the Chair.]

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